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THE
COMMENTARIES
UPON THE
APHORISMS
OF

Dr HERMAN BOERHAAVE,

The late Learned Professor of Physic in the
University of LEYDEN,

CONCERNING

The KNOWLEDGE and CURE of the several
DISEASES incident to HUMAN BODIES.

By GERARD VAN SWIETEN, M.D.

Translated into ENGLISH.

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T H E

P R E F A C E.

IT must be confessed, that in respect to the publication of these, and the remaining sheets of the commentaries upon the present aphorisms, I promised to perform the task I had undertaken in a shorter time than has since lain within my power to perform: but there have been many weighty avocations since laid upon me, which at that time I was unable to foresee. For who could have imagined that the august Empress I serve, would in the midst of the tumults of war, consider not only upon the methods of restoring learning, and useful arts, but even proceed to the execution of them, beyond what one could hope for in times of the greatest tranquillity? It has been her pleasure to have the *Teresian College* erected here under her protection, for the youths of her noble peers, that they might therein prosecute their studies

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dies in divinity, in languages, in philosophy, in the laws, &c. At the same time she also laid her commands upon me to charge myself immediately with the care of the numerous youths that so speedily assembled themselves under the extended wings of her Minerva; thinking it most fit that the heirs of the greatest personages, as the hopes of her kingdoms, should make use of the same physician whom she had judged worthy to be entrusted with the healths of her own august family.

It was also the pleasure of her imperial Majesty that I should enter into serious considerations about reforming and improving the study of medicine in this most ancient university; in the prosecution of which it appeared, in my judgment, necessary and useful for me, to lay down first a plan of the method of learning the faculty of physic, before I could publickly dictate the institutes of the said faculty. But this was a new labour to me; and, indeed, not a slight one.

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Yet this was not all; but I must likewise preside in the affairs of the faculty, and be present at all the examinations, &c. since it was the opinion of her august Majesty, that my station had an alliance to those calls: and there seemed to her no other way of exterminating the abuses that had insensibly crept in, than by demanding of me to take the perpetual province of president over our excellent faculty of medicine.

To all these again it was necessary for me to add another weighty charge, *viz.* that of the imperial library; and, with this, a new labour, which in course devolved upon me, as the new master of the said library: namely, to censure, or pass judgment upon all the books in physic, philosophy, philology, history, miscellanies, &c. For the pious care of her imperial Majesty had issued the strictest laws, by which all books were commanded to be banished her dominions that had the least tendency to corrupt the principles of religion and morality. Yet she would
allow

allow no book to be condemned but what should be first read, and agreed upon by the general consent of all the judges that it deserved to be marked with a black coal.

In this labour, I must indeed readily own myself assisted by two incomparable adjutants ; namely, by both the keepers of the imperial library, whose erudition and skill in numerous languages was such, that there is hardly any tongue in which a book could appear, but one or other of us was able to read and understand it. Their assistances however would not excuse me from labouring many good hours at the work, which often gave no better entertainment than the turning over of trifles, or the more disagreeable aspect of filth. However, the prospect of considerable utility to posterity, easily satisfies me for the fatigues of that work.

From hence all candid and impartial judges may conclude, that neither love of idleness, nor the delights of a court, had any share in causing me to
appear

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appear later to my readers than I gave them to expect. For the same cause has retarded this work, which first moved me to engage in it; namely, the public utility, or good of mankind, for the promoting which I have entirely given myself.

Now although I am beginning to ascend the threshold of advanced age, and continue pressed by the same labours; yet finding my body in sound health, and my mind not impaired in the strength of its faculties, I am therefore in hopes to finish the last part of this work, on which I am now labouring, in a much shorter time than this has been expected.

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COMMENTARIES

UPON THE

APHORISMS

OF

HERMAN BOERHAAVE.

CONCERNING THE

KNOWLEDGE and CURE of DISEASES.

Of a PLEURISY.

SECT. DCCCLXXV.

A Pleurisy is said to be present when a person labours under an acute continual fever (564, 567.) with a hard pulse and a sharp pricking inflammatory pain in the side (382, No. 3.), which greatly increases in the act of inspiration, but abates in expiration, or by holding the breath; also becomes milder when the breathing is performed by the abdomen chiefly, without moving the breast; there is likewise a cough, which is almost incessant, and which exciting great pain, is therefore stifled or suppressed by the patient.

The side of the breast is by the Greeks called πλευρὸν and πλευρά; whence πλευραὶ, *pluræ*, the sides are often used for the ribs: for by this denomination they have been called by *Pollux*^a: but as he called those parts which are seated under the arm-pits by the title of *pleuræ* or sides, he thence named this disease which surrounds the ribs *pleuritis*, a *pleurisy*; and this by the same rule that the disease of the joints has been called *arthritis*, and that of the kidneys *nephritis*. Hence the Latins have entitled this the disease of the sides; and therefore the disease, *pleurisy*, seems aptly enough so called from its seat in the sides. Thus Celsus tells us^b, *stomachus lateribus cingitur; atque in his quoque vehementes dolores esse consueverunt*. “That the gula, or meat-pipe, is surrounded by the sides, and in these last it is usual for violent pains to be seated.” Now although in our days it is customary for many to call the stomach itself by the name *stomachus*, yet Celsus intends by it the gula or œsophagus, as appears from other places^c of him.

But the definition of a pleurisy here given, is not taken from a knowledge of the immediate cause of the disease, which remains to be defined; but from a collection of those appearances which attend upon the disease, and from the presence of which the unanimous consent of physicians assures us there is such a disease before us; for we have seen before that there are two methods of defining diseases, in the comments to §. 820. There is therefore nothing here said either of the part affected in a pleurisy, or of its immediate cause, concerning all which we are to treat hereafter; but the text barely informs us that “a pleurisy is said to be present when, &c.” This method of definition is particularly chose for a pleurisy, because the parts affected are somewhat controverted

^a Jul. Poll. Onomastic. Lib. II. Cap. iv. No. 166. 167. Tom. I. pag. 234. 235. ^b Lib. IV. Cap. vi. pag. 209. ^c Idem. ibid. Cap. i. pag. 182, 184.

verted amongst authors; but concerning the path-
 ognomic, or declarative signs, they are universally
 agreed. *Galen* however joins both methods of de-
 fining together, when he describes a pleurisy^d; for
 he determines both the immediate cause of the disease
 and the parts affected, and likewise enumerates the
 principal symptoms; for these are his words: *quæ in*
succingente costas, membrana, ac musculis illi continuis,
fiunt inflammationes, morbum faciunt dictum pleuriti-
dem: hæc quidem habet inseparabilia symptomata, fe-
brim acutam, dolorem ac si loca (affecta) distraberentur
vel pungerentur, respirationem frequentem & exiguam,
pulsus parvum, arteriam duram, & quodammodo ten-
sam, indicantur: tussim ut plurimum quidem cum spu-
tis coloratis, rara & sine his, &c. “ Those inflamma-
 “ tions which arise in the membrane, which sur-
 “ rounds the ribs, and in the muscles which are
 “ therewith continuous, make the disease which we
 “ call a pleurisy: and this has for its inseparable symp-
 “ toms an acute fever, a pain as if the parts were
 “ over-stretched or pricked, the breathing little and
 “ frequent, the pulse small, and the artery in a pe-
 “ culiar manner tense and hard, by which ’tis pointed
 “ out to us: a cough also most commonly attends it,
 “ with a coloured spitting, but sometimes they are
 “ absent &c.” The same definition of a pleurisy is
 also given us by *Aretæus*^e *Aegineta*^f and *Trallian*^g.

It now remains for us to explain each of the ap-
 pearances that make a part in our definition before
 given.

Pain attends in every pleurisy, but ’tis not every
 pain of the side that has a right to be entitled a pleu-
 risy, as *Trallian* hath well observed to us^h. There-
 fore it is that *Hippocrates*ⁱ, in reckoning up the dis-
 eases of winter, mentions, in one and the same apho-

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rism,

^d De Locis Affectis Lib. V. Cap. III. Charter. Tom. VII.
 pag. 488.

^e De causis & signis morbor. acutor. Lib. I. Cap.
 x. pag. 8.

^f Lib. III. Cap. xxxiii. pag. 40. versa.

^g Lib.
 VI. Cap. I. pag. 266.

^h Ibidem.

ⁱ Aphor. 23, Sect. 3.

Charter. Tom. IX. pag. 118.

rism, pleurifies and pains of the sides and breast distinctly. For to denominate the pain a pleurisy, requires it to be joined in company with an acute continual fever. *Celsus* hath very well observed this distinction in treating upon pains of the sides^k, for says he: *sed interdum id malum intra dolorem est: isque modo tarde, modo celeriter solvitur. Interdum ad perniciem quoque procedit, oriturque acutus morbus, qui πλευριτικός a Graecis nominatur. Huic dolori lateris febris & tussis accedit.* “ But sometimes this malady “ is only a pain inwardly, which disperses or goes “ off without further mischief, either sooner or later; “ but sometimes it goes on to a kind that is more “ pernicious, and gives rise to the disease which the “ Greeks have named a pleurisy. Here you have “ the pain of the side joined with a fever and a “ cough.” Upon this account *Aëgineta*^l, after having treated of a pleurisy, subjoins remedies for pains of the sides which are without a fever; and which he distinguishes by a peculiar title. Accordingly *Juvenal*^m has admirably well expressed this disease, when he says;

*Præterea, lateris vigili cum febre dolorem
Si cæpere pati, missum ad sua corpora morbum
Infesta credunt a Numine, &c.*

For there are many known causes which produce a pain of the side, which is however not pleuritic. We have before observed from *Hippocrates* and *Galen*, in our comment upon contusion, §. 326. that sometimes the muscles undergo such violent strainings by racing, wrestling, lifting great weights, &c. that even some of their fibres are thereby broke, in which cases the antient physicians have called the over strainings *σπάσματα*, and the rupture of fibres *ρήγματα*; and have admonished us that intense pains ensue thence, and

^k Lib. IV. Cap. vi. pag. 209. ^l Lib. III. Cap. xxxiiii. pag. 41. ^m Lib. V. Satyr. 13. vers. 229.

and such as are more especially difficult to remove about the thorax or breast. Such pains are again observed in hystERIC and hypochondriac persons, in whom they are often very sharp, but without a fever; and for these pains, the treatment of a pleurisy, by copious and repeated blood-lettings, would be not at all suitable. For as we have before observed from *Sydenham*, in commenting on §. 633. this wonderful distemper is able to put on a great variety of faces, so as to resemble almost every other disorder. Sometimes also we meet with resembling pains from the gout driven inward from the extremities.

These two therefore, pain, and an acute continual fever, always attend upon every pleurisy. What we mean by an acute fever has been declared before (at §. 564.) and we have also remarked §. 567. that those cases which are joined with such a fever are called acute febrile diseases. Now a pleuritic pain is not slight and dull, but sharp and pricking, such as we before shewed to arise from distention of inflamed vessels (§. 382. No. 3.); which is a remark taught us by Galen, and the other mentioned Greek writers, who have given us the description of a pleurisy. This ought more particularly to be remarked, because even in fevers *Hippocrates* has observed pains of the sides not pleuritic; concerning which you may consult the comment upon §. 772. For thus in his coan prognosticsⁿ we read *dolores circa latus, in febris tenuiter consistentes, absque signis, venesectione lædit*. “That blood-letting “is prejudicial in slight pains of the sides, which “attend fevers that have not urgent signs.” For here he seems to treat of pains which are not very acute, nor accompanied with the other signs of a pleurisy. Duretus^o indeed is of opinion that the words (ἐν πυρετοῖσιν) in fevers, are better read ἀν πυρετοῖσιν)

ⁿ No. 491. Charter. Tom. VIII. Pag. 880.
Hippocrates pag. 387.

^o In Coacas

σιν) *without fevers*; but it will perhaps appear more probable that we ought to make no change in the text, if we consider that in the very same presage Hippocrates reckons up another disease in which venesection is also pernicious; namely, in the cold sluggishness or torpidity, where he expressly adds (ἐν ἀπύρεσις) *not without fevers*.

But a hard pulse is remarked in most of the more acute inflammatory diseases, from the more dense and compact blood passing more difficultly thro' the extremities of the capillary arteries^p: such a pulse is therefore observed to us by *Galen*, in his description of a pleurisy, as we said before; and in another place he remarks^q, that the hardness of the pulse in pleuritics occasions those who are less experienced to take it for one vehement or strong; such, namely (*qui durum ictum nequeunt a vehemente distinguere*) “as cannot “distinguish betwixt the hardness and strength of “the impulse.” However this sign may sometimes be deceptive, when the sick cannot take in their breath for the severity of the pain, to avoid which they almost suffocate themselves; for then a peripneumony begins to arise from the pleurisy, and the pulse seems small and soft; of which we shall treat hereafter at §. 883.

But since, when the thorax is dilated by inspiration, the inflamed parts are more stretched, the pain will consequently be at that time increased; and for the same reason it will be slighter during the expiration, and when the sick hold their breath. From hence it is that those who have a violent pleurisy scarcely breathe, to avoid the severity of the pain; whence they almost suffocate themselves. Hence it is that such patients are often eased in their pain, while the thorax remains bound up with a roller, so as to allow little or no dilatation to the breast in respiration; for in that case inspiration is performed principally by the

^p H. Boerhaave Institut. §. 962.
Cap. xii. Charter, Tom. VIII. pag. 9.

^q De Pulsib. ad Tyrone

the abdomen, without moving the thorax. For in the act of inspiration the thorax is dilated not only by the motion of the ribs, but likewise that of the diaphragm, which being drawn downwards enlarges the capacity of the chest, while at the same time it lessens that of the abdomen; whereupon the abdominal viscera, being compressed, urge against the muscles of that venter, and thrust out the belly. Therefore while the thorax is thus immoveably bound up, there may be still a sufficient space made for dilating the lungs by the inspired air, while the diaphragm is drawn downward; which now probably acts with a greater force than when the thorax is conjunctly dilated with it: thus we see the manner in which the breathing, absolutely necessary to life, may be still carried on. But the breathing will also suffer more or less impediment according to the situations of the inflamed parts, as will hereafter appear §. 877.

Now a cough is almost constantly present with a pleurisy; for which reason it is always ranked, by the best writers, amongst the signs of the distemper. But if inspiration itself so much excites the pain of a pleurisy, it will be evidently enough much more increased when the chest is shocked by a cough; for which reason such patients endeavour to stifle the cough as much as possible, and when their efforts are insufficient, they are often convulsed by the severity of the pain.

An assemblage of all these appearances together plainly point out a pleurisy: but then as *Aretæus* very well observes, *opus est autem, omnia hæc (pleuritidis phaenomena nempe) inter se consonare atque conspirare, ab una causa pendentia. Quaecumque, enim ex his sparsim alia ab aliâ causâ producuntur, etsi omnia simul ingruunt, pleuritis non vocatur.* “It is necessary

“ for all these signs of a pleurisy to concur together,

“ and agree in their resulting from the same cause.

“ For whenever any of them are incidentally produ-

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“ ced

“ced from another cause, although they may all
 “concur together, they make not what we call a
 “pleurisy.” For if, by example, a pain of the side
 arises from an over-stretching of the parts by violent
 strainings, or if a cough attends from a defluxion or
 taking cold, while an acute continual fever is also
 excited from any other cause, (as any contagion of
 the small-pox, measles or other epidemical matters)
 we shall then indeed meet with all the pleuritic symp-
 toms together, when at the same time we cannot call
 the disease a pleurisy; because they do not all take
 their origin from one and the same cause.

S E C T. DCCCLXXVI.

WHenever with these symptoms there are
 also incidental or symptomatic spittings
 from the lungs; the pleurisy is then said to be
humid or humoral; but when discharges by
 spitting are absent, it is then termed *dry*.

We have just now surveyed the signs by which a
 present pleurisy may be known; and it here follows
 that we say something concerning the different kinds
 of this disease: for it has by medical writers been di-
 stinguished into dry and humoral, true and spurious,
 original and symptomatic. Of the dry and humoral
 pleurisy we are to treat under the present aphorism;
 and of the rest we shall speak at the following num-
 bers.

As a cough is almost a perpetual attendant on a
 pleurisy; since spittings are of the utmost import-
 ance in a peripneumony, and since a pleurisy itself
 is frequently terminated by a spitting, as at §. 888.
 will appear; therefore in the beginning of a pleurisy
 skilful physicians always observe whether there be
 any spitting discharged with the cough, and of what
 kind it may be. Whenever any spitting is expecto-
 rated

rated by the cough, whatever appearance it may have, the pleurisy is then termed humoral or humid; but if the cough be dry, or fruitlessly troublesome to the patient, the pleurisy is termed dry; and from hence we derive the first and most obvious distinction of a pleurisy, formerly remarked by Hippocrates^s, Galen^t, Celsus^u, Trallian^w, and others of the antients.

But since it is a valuable admonition of *Galen*, as we declared before, in speaking of pleuritic and peripneumonic affections, §. 830. No. 2. that this discharge which is made by spitting has a near affinity to the sediments of urines (which point out either crudity or concoction in acute diseases, for which reason he has pronounced a dry cough without any spitting to have the same import with a watery urine, which is deservedly reckoned the most crude and of the worst presage;) from thence it is evident that the distinction of pleurisies into dry and humoral conduces much towards forming a just prognosis. For a dry pleurisy is by all condemned as the most dangerous, troublesome to treat, and difficult to bring to a concoction or crisis^x either for snatching off the patient with great rapidity, or not dispersing itself till after a very long time^y. *Celsus** however, tho' he condemns a dry cough in this disease, seems yet to have judged a bloody spitting to be here of worse consequence, when he says: *Huic dolori lateris febris & tussis accedit: & per hanc excreatur, si tolerabilis morbus est, pituita; si gravis, sanguis. Interdum etiam sicca tussis est, quae nihil emolitur, idque vitio primo gravius, secundo tolerabilius est.* “ To this pain of
“ the side there is joined a fever, and a cough: and
“ by this last, if the disease be tolerable, there is
“ made a phlegmatic discharge; but if violent,
“ blood

^s De Morbis Lib. III. Cap. xv. Charter. Tom. VII. p. 590.

^t De locis affectis Lib. V. Cap. 111. *ibid.* pag. 488

^u Lib. IV. Cap. vi. pag. 209. ^w Lib. VI. Cap. 1 pag. 267. * Vide locum citatum Tralliani & Hippocratis uti & Coac. Prænot. No. 381. Charter. Tom. VIII. pag. 873. ^y Vide Galeni locum citatum.

* Lib. IV. cap. VI. pag. 209.

“ blood is spit up. Sometimes also there is a dry
 “ cough, in which nothing is expectorated; and
 “ this is a symptom worse than the phlegmatic spit-
 “ ting, but more tolerable than the bloody.”

However practical experiences assure us that a pleurisy is often attended by a spitting that is tinged with blood, which yet proves much less injurious than when the disease is without any spitting at all.

S E C T. DCCCLXXVII.

THere is no part of the internal coverings of the thorax which this inflammation does not invade: therefore the whole of the pleura, and the whole mediastinum, are equally subject to this malady, whether in their fore-part or back-part, on the right side or the left, above or below, more outwardly or inwardly seated: but the sides are more especially liable to it.

We come now to review the parts affected in a pleurisy. Indeed all the symptoms inform us that there is a violent inflammation in this malady; but physicians are not all agreed upon the parts in which this inflammation is seated. The most acute pain felt during the inspiration of pleuritic patients, teaches us, that in that time the inflamed parts are agitated or stretched. The membrane which the ancients have called *succingent*, or surrounder of the ribs, is by many assigned as the only and proper seat of a pleurisy; but latterly the received name of pleura has by physicians been generally used, with how little propriety^z we will not say, to denote this ample membrane which lines the whole interior capacity of the thorax, covers the pericardium, and by its two sides or bags together constitutes the mediastinum (see

^z Petit. Comment. in Aratæum, pag. 151.

(see comment to §. 170. No. 4.) For such is the description of this disease given us by *Aretæus*^a: *sub costis dorso & internis pectoris ad claviculas usque, tenuis membrana robusta substrata est, ossibus adnata, cui nomen succingens. In hac quum phlegmone suborta fuerit, febris (adest) cum tussi, & sputis variis, pleuritis vocatur ille affectus.* “About the ribs, back, “and internal parts of the breast as far as the clavicles, is spread a thin strong membrane that grows “to the bones; and to this has been given the name “of succingent. When a phlegmon arises in this “membrane, there is a fever, with a cough, and a “various spitting; but this malady is called a pleurify.” To this sentiment of *Aretæus Aegineta*^b and *Trallian*^c have also subscribed. *Celsus* indeed^d says nothing of the parts affected when he describes this disease: but *Galen* (as we observed at §. 875) lays it down that an inflammation, not only in the succingent membrane, but also in the muscles that are continuous with it, constitutes a pleurify.

But as there is a very near affinity betwixt a pleurify and a peripneumony, so they often arise from the same causes, both distempers have a cough, and a pleurify is near as often relieved by a spitting from the lungs; a peripneumony often accompanies a severe pleurify, or almost constantly follows after it: therefore some physicians of great note, and equal merit in the practice of physic, have been of opinion that the same parts, namely, the lungs, were affected in both these maladies. Dr. *Sydenham*^e has acknowledged so near an affinity betwixt a peripneumony and a pleurify, that after weighing all the symptoms or appearances of the last, he concludes “That it is “nothing else than a fever arising from a peculiar inflammation of the blood, in which nature deposits “the

^a Lib. I. de causis and signis morbor. acutor. Cap. x. pag. 8.

^b Lib. III. Cap. xxxiii. pag. 40. versa. ^c Lib. VI. Cap. i. pag. 266. ^d Lib. IV. Cap. vi. pag. 209. &c, ^e Sect. VI. Cap. iii. pag. 334.

“ the peccant matter upon the pleura: but that
 “ sometimes she throws it upon the lungs, where-
 “ upon a peripneumony arises; which he therefore
 “ presumes different from the former only in degree,
 “ by a greater intensity of the same cause, and in a
 “ greater amplitude of its extent.” But in the mean
 time he assigns a distinct seat to each of these maladies.

Nor is it a novel opinion that the lungs are the parts affected in a pleurisy; for *Aurelian*^f reckons up a number of antient physicians, who defended this sentiment. And even in *Hippocrates* there are found some passages which seem to favour the same opinion: for, thus, in treating of a defluxion, settling upon the breasts, he teaches that the lungs being naturally dry and spongy, draw to themselves the conflux of humours, by which they become swelled, and in contact with the side, which succeeding in both lungs makes a peripneumony; but in either of them singly, a pleurisy. In another place^h he says, a pleurisy happens when either lungs being greatly dried by the violence of thirst, lies impotent or unactive on the side or ribs, with which it is contiguous: but we know from physiology that the lungs are naturally always contiguous to the pleura: and we have made it evident enough in the history of a peripneumony, that the origin of a pleurisy can by no means be owing to that cause.

The celebrated *Hoffman*ⁱ was of opinion that a bastard or false pleurisy occupied only the external parts of the breast by its inflammation; but that if it invaded the surface of the membranous substance of the lungs, like an erysipelas, it made then a true pleurisy; and if it yet descended deeper into the substance or body of the lungs, it then constituted a peripneumony. This same opinion has been embraced by the learned *Triller*, in an elegant and useful

^f Acutor morbor. Lib. II. Cap. xvi. pag. 115. ^g De Locis in Homine Cap. vii, Charter. Tom. VII. pag 365. ^h Ibidem Cap. x. pag. 369. ⁱ Medicin. Ration. Systematicæ Tom. IV. Sect. II. Cap. vi. pag. 426, 427.

ful tract that he has wrote on a pleurisy; and therefore he concludes we had better call the disease a *pleuripneumony*, or a *peripneumopleurisy*^k. Certain we are that the pleura only is not solely or constantly the seat of a pleurisy, and we have shewn before that *Galen* himself adds the muscles which adhere to it; and hereunto we ought to add the cellular web, or adipose membrane, which makes such a considerable appearance, in the spaces betwixt the ribs of fattened animals, and which in our comment to §. 374. we proved to be the most frequent and stubborn seat of inflammation; for a phlegmon once formed may so enlarge, or distend the adipose membrane into a tumor, as to strain the incumbent pleura with exquisite pain^l. Since therefore it appears from the history of inflammation before given (§. 373.) that all parts of the body may become the seat of a phlegmon, in which we observe the distribution of arterial net-works, or the origin of lymphatic arteries; 'tis therefore plain that the same may take place in the pleura, surrounded with the incumbent fat, and intercostal muscles: and from hence we may conclude that the membranous pleura may be the seat of a pleurisy, even tho' the malady may have no fixed residence within its substance as many have affirmed; for the phlegmon is oftener found within the fat and intercostal muscles.

Certainly the very sharp pain, which in a pleurisy pierces the side immediately upon the first effort of inspiration, seems to teach us that the disease is not confined to the lungs only, since frequently there is no pain at all in a true peripneumony, and sometimes the patient feels only an obtuse pain, as we have seen before. But does it seem credible, that in a violent peripneumony the phlegmon should not extend enough to the membranous surface, which is the supposed seat of a pleurisy, as to excite therein a sharp

^k Cap. I. pag. 9. ^l Abrah. Kaau Perspirat. Hippocrat. Cap. VII. No. 143. pag. 66.

sharp pain? Certain we are that in opening bodies deceased of a pleurisy, we often observe no great disorder in the pleura. Accordingly *Jacotius*^m confesses, that in the dissections of pleuritics, he rarely observed any swelling in the pleura, altho' there had been a phlegmon antecedent. 'Tis true this membrane being thin and tense shews no considerable swelling, altho' it may be inflamed; for in a phlegmon the bulk of a swelling depends almost entirely upon the turgescence of the adipose or cellular substance. Conformable with this we have known inflammations of the periosteum, ligaments, and meninges of the brain excite the most severe pains without any remarkable tumor: therefore it is that *Jacotius*ⁿ adds to his former remark: "by the name of inflammation we understand, not only an immoderate quantity of blood, collected in any void spaces, but also any excess of it, within the small vessels of a part." In this respect the testimony of *Peter Servius* is still of more weight, who after opening three hundred persons, deceased of pleurisies at Rome, always found one lobe of the lungs corrupted and distended with a putrid matter; but the pleura appeared not at all affected, or at most but slightly disordered^o. Indeed if we consider that a pleurisy and peripneumony are often conjoined together, and that it is not from the pleurisy only that the patient dies, nor from any inflammation of the costal interstices, but oftener because the immense pain occasions the necessary motion of the thorax to be suppressed, whereby the course of the blood being stopped thro' the lungs, brings on a fatal peripneumony (see §. 905.); from thence the reason will be evident why in bodies deceased of a pleurisy the disorder is rarely constantly found in the lungs, while the pleura appears but slightly affected: for it is remarkable *Servius* does not deny the pleura to be affected, only confines it to

^m Höllerii Commentar. in Coac. Hippocra. 429.
 • Triller. de Pleuritide, Cap. 1. pag. 10.

ⁿ Ibidem,

to a small degree; therefore the nearer cause of death was by him found in the disordered lungs, altho' the original distemper might lie seated in the pleura, or in the adjacent muscles and panniculus adiposus; but that the pleura is truly affected in this distemper, stands confirmed by a great number of observations. *Aurelian*^p tells us, *Manifesta namque conjectura est, quod ipsa (pleura,) patiatur. Si quidem tumoris augmento collectionem in pleuritidis faciat, & exspirantibus saepe aegratis nigra inveniatur.* "Tis a true conjecture that the pleura itself suffers in this distemper: for in pleuritic bodies, by an increase of the swelling or phlegmon, it forms a head or gathering, and in those who are deceased, it is often found of a black colour."

Diemerbroek^q dissected a woman deceased of a pleurisy, before many spectators in the public hospital, who had for the first fourteen days been most severely afflicted by the distemper, but afterwards a suppuration being formed, the malady seemed abated for some days until at length death brought it to a period: in this case he found the lungs quite at liberty from the pleura, but the whole pleura was inflamed on the right side, from the arm-pit down to the diaphragm: an abscess had also broken itself about the fifth and sixth rib, so that two of the ribs were thereby laid naked of their pleura, for the compass of two fingers breadth, and a moderate quantity of pus or matter was thence discharged into the capacity of the thorax: but that lung was found without inflammation, or any injury from other causes. The like circumstances he observed in the body of a man, afterwards extinct of the same disease; from whence he concludes the opinion to be false which fixes an inflammation of the surface of the lungs as a constant attendant on a pleurisy. Moreover in the bodies of persons deceased of a peripneumony, he found one half

^p Acutor. Morbor. Lib. II. Cap. xvi. pag. 117. ^q Anatom. Lib. II. Cap. xlii. pag. 309.

half of the lungs inflamed in their outer surface, altho' the afflicted, during life, complained but of a heavy pain. *Harderus*^r hath also remarked the pleura to be affected in the like manner, in persons dead of a pleurisy; to which we could add other authorities, but too numerous to be here recounted.

Even *Hippocrates*^s expressly pronounces that bile, and pituita or size, impacted into the side, causes a pleurisy; but when the same are drawn in upon the lungs, they make a peripneumony.

From all we have advanced then, it may be concluded, that the pleura, incumbent on the costal muscles, and contiguous to the fat, is truly the part affected in a pleurisy; but that the lungs also may become affected in the same malady, by stifling the respiration, by which they may be inflamed; but then this inflammation of the lungs is altogether distinct from that of the pleurisy. Nor is the cough any objection to this, which some physicians of note have thought must arise from the lungs only affected: for when the intercostal spaces are swelled out by inflammation they may press upon and irritate the lungs so as to produce a cough; or even the respiration itself impeded, by the severity of the pain, may excite a cough. For thus in gravid women, where the womb rising out of the pelvis presses upward the viscera of the abdomen, so as to hinder the free motion of the diaphragm; we sometimes meet with a very troublesome cough^t. Any irritation of the inner nares, or a rough touching of the membrane that lines the meatus auditorius may also excite a cough^u. If therefore a cough may be thus occasioned by irritation of other parts far distant from the lungs, much more by inflammation and pain of those parts which are actually contiguous with the lungs. *Hippocrates*^w observes that a cough attended in a tumor of the

^r *Harderus* *Apiar. Observ.* 53. pag. 222, 223. ^s *De Morbis Lib. I. Cap. 11. Charter. Tom. VII. pag. 546.* ^t *Mauriceau, Tom. I. Liv. I. Chap. xvi. pag. 141.* ^u *De Morbis Lib. II. Cap. xxiv. Charter. Tom. VII. pag. 575.* ^w *Acut. Morbor. Lib. II. Cap. xiii. pag. 110.*

the side, which he ordered to be laid open either by cautery or incision, when it should come to a suppuration: even the pus-like spittings that are discharged in pleurifies come from the lungs; but of this we shall speak more hereafter (at §. 888. No. 6.) where it will appear, that even from the spittings, we cannot conclude that in every pleurify the lungs are always and primarily affected.

Since therefore an inflammation in the membrane itself which we call the pleura, and upon which lies the fat and intercostal muscles, may cause a pleurify; it is evident, that the malady thus called may be seated in very different and even remote or distant parts of the body: for the whole internal circumference of the thorax is covered by these, and the mediastinum itself is composed of the pleuræ doubled one against the other with some of the cellular substance placed between; and the pleura is also spread over the pericardium and diaphragm. However it has been customary with physicians to call the disease a *paraphrenitis* when the inflammation invades that part of the pleura which is spread upon the diaphragm; and concerning this, because it has some peculiar symptoms, we shall treat hereafter in a peculiar chapter; and in the same place we shall add the most considerable part of what we have to say upon an inflammation in the pericardium, and mediastinum particularly.

I have observed pleurifies seated throughout the whole extent of this membrane; and the like is occasionally confirmed by the testimonies of authors of the best repute: but most frequently of all, the sides are possessed by this malady; for which reason *Aurelian*^w concludes, that the disease took its name from the part of the body which it principally invades. This observation is the more necessary to be remembered, because those who are less skilful in our faculty imagine there is no pleurify if there be no pain in the

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side;

^w Acut. Morbor. Lib. II. Cap. XIII. pag. 110.

side; and the common people even fancy that the left side only is obnoxious to the malady; from whence they frequently neglect the distemper, to the utmost danger of the patient, when the pain lies in the right side. But, upon the whole, in reviewing the numerous histories which I have collected of pleurifies, I find the right side to have been oftener affected than the left; and the learned *Triller*^x has made the same remark, and also assures us, that he has observed the pleurisy to be of a more favourable disposition when seated in the right side; but that it has proved more dangerous, stubborn, or inveterate, when it has been fixed in the left side. *Aretæus*^y antiently has observed to us, that the pain extends throughout the whole continuity of the pleura, and that it sometimes reaches the back and shoulders; and then it was by the antients called a dorsal pleurisy, as appears from an ingenious correction made in the reading of this obscure passage by *Petite*^z. *Hippocrates*^a has made mention of a pleurisy in the back; but some particulars appear in that place which seem to shew the text is some way vitiated. Observations also inform us that this malady has taken up its residence under the sternum itself, as *Schenck*^b relates to us, out of *Peter Salius's* treatise concerning the cure of diseases not expounded by common practitioners; for in the body of a man deceased on the ninth day of the disease, contrary to the expectations of his physicians, an inflammatory tumor of a considerable magnitude was found in the mediastinal membranes, which even in part extended to the pericardium. In these cases the patients had all the appearances of a sharp pleurisy; but instead of a pain in the side, they had a troublesome uneasiness felt under the sternum, with a sense of great heat or burning in the thorax. But it is evident enough that the pain of the

^x De Pleuritide pag. 4. ^y De Causis & Signis Morb. Acut. Lib. I. Cap. x. pag. 8. ^z Ibidem pag. 152. ^a De Morbis Lib. III. Cap. xv. pag. 590. ^b Lib. II. pag. 289.

the inflamed parts in these maladies, must be so much the sharper, as the membranes are more stretched, or agitated, at the time of inspiration; whence it follows, that a pleurisy may be attended with divers degrees of severity in the pain, according as the disease lies, either in one part or the other of the thorax.

S E C T. DCCCLXXVIII.

NOW whenever the membrane itself, which surrounds the ribs internally, becomes the seat of this pain, or even the continuous parts of the internal intercostal muscles, 'tis called a *true* pleurisy; but if it lies more superficially, within the intercostal muscles, more especially the external ones, or if it affects the parts that lie above them, 'tis then called a *spurious*, or *bastard* pleurisy.

It has already appeared that some pains of the side, which are not accompanied with a fever, have no relation to a pleurisy; §. 875. But there are still other pains of the side observed, which have a fever, and which, though they hinder the freedom of respiration, are yet not so dangerous in their events; and these have given birth to the distinction of a pleurisy into *true* and *spurious*. A true pleurisy was said to be an inflammation in the pleura itself, or in the parts immediately continuous with it; but if the parts above these, nearer to the outer integuments, were the seat of the phlegmon, we termed it a bastard pleurisy. The principal difference then betwixt the two kinds of the pleurisy lies here, that the vital respiration is so much the more impeded as the malady is seated more inwardly; and that a suppuration following after such an inflammation, seated in the exterior parts, has rather an outward tendency to discharge itself; whereas when the malady is more deeply seated, it

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tends to break into the capacity of the breast. Galen^c has well observed this, and mentioned the signs by which the two nearly related maladies may be distinguished, one from the other: for after having treated of a pleurisy, he goes on thus: *sunt vero alii laterum dolores cum febris, per quos necessario densa & parva respiratio fit: nihil autem exspuitur ut ideo sputi expertibus pleuritidibus similes fiant; verum facile ab illis discernuntur; tum quod nulla sit tussis, cum sputi expertes (pleuritides) siccam tussim habeant; tum quod neque tensionem neque duritiem ullam referat pulsus, neque adeo acuta febre laborent, & respirationis difficultas minus illos molestat: nonnulli etiam, premementibus nobis extrinsecus locum inflammatum, dolent. Illis repurgatio non fit per sputa, quia ab initio nihil (humoris) inflammationem excitantis ad thoracis spatium pervenit. Concocta vero inflammatione, nisi pus prius discutiatur, ad cutim attollitur, & secatur.* “ But
 “ there are other pains of the sides joined with fe-
 “ vers, which necessarily occasion the breathing to
 “ be quick and small; but there is no expectora-
 “ tion in these, so that the want of a spitting gives
 “ them the resemblance of pleurisies, from which
 “ however they are easily discernable, as well because
 “ they have no cough, while pleurisies without a
 “ spitting have a dry cough, as because they have
 “ no tightness and hardness of the pulse, nor is the
 “ patient’s fever so acute, and the difficulty of breath-
 “ ing with which they are oppressed is also less:
 “ some of them also are painful, if we press outwardly
 “ upon the parts inflamed. In these again there is
 “ no salutary discharge by spitting, because from
 “ the beginning none of the humour that excites the
 “ inflammation flows to the cavity of the breast;
 “ but when the inflammation is arrived to a state of
 “ maturity, if the matter be not first absorbed or
 “ dispersed, it points up to the skin, and may be
 “ let

^c De Locis affectis Lib. V. Cap. 111. Charter. Tom. VII. pag. 488.

“ let out by incision.” A passage of the same import is also given us by *Aegineta*^d; but it seems very difficult to be able to discern whether the inflammation occupies only the outer or the inner intercostal muscles, since they lie close one upon the other, and have a like action; therefore the distinction betwixt a true and bastard pleurisy, which is derived from this quarter, will be much more obscure, while that will be much more evident which may be had from the passage last cited from *Galen*.

’Tis also to be remarked, that sometimes both the intercostal spaces, and all the parts incumbent upon them, are inflamed at the same time; and this case, however rare, I have sometimes seen; but, as denominations are taken from that which is most considerable, or significant, such a disease it seems ought rather to be referred to the true than the bastard species of a pleurisy.

S E C T. DCCCLXXIX.

A Pleurisy invades principally those who have done growing, of a sanguine complexion, who make free with vinous or fermented drinks, or with high foods, and are given much to robust exercises, or are seldom troubled with acid belchings, but easily fall into inflammatory distempers; it also principally invades in the spring season, more especially when the weather suddenly comes in very hot, after a sharp frost has preceded; or it may invade in the winter, after a sharp cold wind; and under these circumstances the distemper is called *idiopathic*, or original.

Trufty observations have taught us, that every age, and constitution, is not equally obnoxious to

this malady; and that even the different seasons of the year, and changes of the weather, deserve a share in these considerations, concerning which we are now to treat.

The disease we call a pleurisy is of the inflammatory kind, and therefore most to be feared in those who have a natural tendency to such distempers: such a tendency have those persons (mentioned before on another account at §. 772.) whose vessels are strong and close contracted, whose juices are dense or compact, acrid and swiftly moving. The pulse in these persons is usually larger and quicker than in others; their habit of body thin, or slender, active, hot, and strong. Hence it rather invades such as are adult, or full grown, than those of younger years, in whom the solids are found of a loose fabric, and the fluids less dense or compacted; for which reason *Hippocrates* (see comment to §. 874) has pronounced, that a pleurisy and peripneumony invade not before the age of puberty; however, as a rarity, the distemper does sometimes seize upon those of younger years. On the same account *Aurelian*^e has remarked, that males have this malady more frequently than females; but *Triller*^f assures us, that it affects women in a worse degree than men, tho' it does not so often lay hold of them: for it seems the causes must be very violent that are able to excite a pleurisy in women, who are naturally of a habit less prone to the distemper than men. But *Hippocrates*^g has told us, *In morbis minus periclitantur, quorum naturae, aetati, habitui, & anni tempestati morbus magis familiaris fuerit, quam quibus in horum aliquo non familiaris sit.* "That those are in less danger in diseases who are
" by their nature, age, habit, and season of the
" year, more familiar with them than those who
" are not so." And *Galen*^h in his comment upon that
text

^e Acutor. Morbor. Lib. II. Cap. xiiii. pag. 111. ^f De Pleuride pag. 4. ^g Aphor. 34. Sect. 2. Charter. Tom. IX. pag. 75. ^h Ibidem pag. 76.

text very well remarks, that the greatness of the danger does then not depend upon the constitutional habit of the patient, but upon the violence of the causes which produce the disease. These passages may be easily reconciled by those mentioned at §. 874. where it was said that a peripneumony rarely happens to women, children, and men of a lax habit; and that in such it is easily cured, almost of its own accord; because the natural dispositions of the fluids and solids of such persons less favour the disease: but if notwithstanding, the violence of the remoter causes shall be sufficient to excite a violent pleurisy in those undisposed persons, it is not impossible, but the malady may sometimes be dangerous, and it will be still worse if the patient is strong and much exercised; and it may in such arise even from a slighter cause.

*Sydenham*ⁱ has observed to us, “that this disease attacks chiefly those of a sanguine temperament, and oftener husbandmen, farmers, or those who are generally fatigued with much labour.” But that this malady proves most pernicious to those habits, and to exercised or labouring persons, is an ancient admonition of *Hippocrates*^k, which we mentioned before upon another occasion. The learned *Triller*^l also remarks, that he has oftener met with this malady in dry, lean persons, than in those who were fat and moist; for in the former both the vessels are more rigid, and the humours are observed much denser. For this reason *Aretæus*^m seems to have believed, that old people are more especially obnoxious to pleurisies; but that they oftener escape, because a phlegmon is rarely excited to any violent degree in old age; on the contrary he says of young persons, and those who are in the prime of their age, that they are seldomer afflicted with the malady, but then

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ⁱ Sect. VI. Cap. III. pag. 331. ^k Coac. Praenot. No 398.
 Charter. Tom. VIII. pag. 875. ^l De Pleuritide pag 3. ^m De
 Causis & Signis Morbor. Acutor. Lib. I. Cap. x. pag. 9.

they as seldom recover from it, because the pleurisy usually rages in them with so much more violence. That a firm strong habit of the solids encourages this malady may be also concluded from the words of *Hippocrates*ⁿ, in his book upon air, water, and situations; for he remarks, people who dwell in cities exposed to the north, have their bodies drier and stronger; but then they live more obnoxious to pleurisies: on the contrary, those who live in cities exposed to the southern winds, have generally their bodies more weak or lax (*ἀτονώτερα*); but then they are seldom seized with pleurisies^o.

As for meats and drinks, acrid or high relished in their own nature, or only taken to excess in quantity, we have already seen how they may excite fevers in our comments before upon §. 586. and therefore 'tis evident, those who eat and drink richly, if they are at the same time by age and constitution naturally prone to feverish diseases, may very easily fall into a pleurisy. Hence it is that *Hippocrates*^p reckons excessive drinking of wine as one cause of a pleurisy; but an abuse of fermented or vinous spirits is still much worse; as by these the albuminous juices are curdled, or coagulated, and the solid fibres become wrinkled or shrunk up; and therefore as *Triller*^q justly observes, “pleurisies happen to none more frequently, or more severely, than to such as have made it the custom of their life to drink much of spirituous liquors, more especially of brandy, or the like.” I have myself often seen pleurisies fatal on the third or fourth day in sottish persons.

Such as seldom have sour belchings.] *Hippocrates*^r in his aphorisms informs us, *qui acidum eructant, rara pleuritici fiunt*: that those who have sour belchings are seldom troubled with a pleurisy. When
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ⁿ Charter. Tom. VI. pag. 191. ^o Ibidem pag. 190. ^p De Morbis Lib. I. Cap. 11. Charter. Tom. VII. pag. 546. ^q De Pleuritide pag. 4. ^r Sect. VI. No. 33. Charter. Tom. IX. pag. 269.

we treated of spontaneous, or slow diseases from acidities, we shewed, that a scarcity of good blood, and a weakness of the fibres, vessels, and viscera, with a neglect of animal motion or exercise (see §. 61.) are deservedly reckoned among the causes of acid acrimony. But from what has been said it is plain, such bodies are the least disposed to inflammatory diseases; and thence the reason of this aphorism is plain. But after *Helmont*^s had laid it down, that an hostile acid fixed itself like a thorn into the pleura, to cause a pleurisy, physicians gave a very different interpretation to this aphorism, such as suited with their favourite opinion; for they imagined the malady oftener afflicted those who had seldom any sour belchings, because that being retained within the body in mixture with the blood, it laid the basis of this disease; but the vanity of this notion appears plainly enough, as well from the causes of a pleurisy, which we shall hereafter recount, as from the whole history of the disease itself.

Easily falling into inflammatory distempers.] What kind of propensities to feverish distempers these are, we have already declared, a little before, under the present aphorism; but such an inclination of the body is known from the constitution, and the past diseases.

In the spring season, &c.] A pleurisy may indeed arise from the causes following in all seasons of the year; but whenever the distemper rages epidemically, tis chiefly in the spring quarter, more especially at that turn of the seasons, which being only a small portion of the year, serves as a link to chain the spring and summer together, as *Sydenham*^t informs us; to which I am myself a witness, from my own observations of the epidemical seasons.

In the winter, after a sharp cold wind.] That the particles of the blood congeal by cold so as to be

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^s In *Capitula Pleura furens*, No. 13. pag. 319. ^t Sect. V. Cap. v. & Sect. VI. Cap. 111. pag. 306, 330.

a cause forming obstructions in the least arteries, hath been demonstrated before at §. 117. If then a continued and severe cold wind is driven into the lungs, which lie contiguous to the pleura, and at the same time sweeps over the whole body, the costal intervals will in that case be exposed, both without and within, to severe cold. But again, uncautious persons will be still more liable to a pleurisy, if they go into such a cold air suddenly, from the bagnio, or other warm place, not sufficiently defended with cloathing; the reason of which we have given at §. 118.

For these reasons *Hippocrates*^u pronounces, that pleurifies and peripneumonies happen the most frequently and severely in winter time; and *Aretæus*^w gives us the like intelligence.

Under these circumstances 'tis called ideopathic, &c.] Namely, when the cause of the pleurisy has resided in the costal spaces from the first attack of the disease, and is not any pain first formed in some other part of the body, and afterwards translated thence to the side; for *idiopathy* (ἰδιοπαθεία) denotes the original, or primitive malady.

S E C T. DCCCLXXX.

BUT a pleurisy is said to have arisen symptomatically, when it springs from the matter of some other inflammatory distemper put into motion, and translated upon the parts described at §. 877, and 878.

Sometimes a pleurisy succeeds after other maladies have afflicted the patient, and then it is called symptomatical: for thus, on another occasion §. 752. we remarked that a quartan improperly treated with

^u De Affectionibus Cap. 111. Charter. Tom. VII. pag. 621.

^w De causis & signis morbor. acutor. Lib. I. Cap. x. pag. 9.

with hot medicines, in the spring time, turned into a severe pleurisy. Also *Sydenham** in like manner informs us of pleurifies incidental, which come symptomatically after other fevers, of all kinds and denominations; but he remarks they are principally occasioned by an abuse of hot medicines in the beginning of the distemper; more especially if the patient's age, constitution, and the season of the year betwixt spring and summer, conspired together to heighten the disease.

This distinction of a pleurisy into original and symptomatical, is of very considerable use towards the cure; for if it be the primitive distemper, it generally requires copious and repeated blood-letting; but if the pleurisy be symptomatical, or consequent of some other epidemical disease, which will not bear venesection, at least to be repeated; in that case blood is to be drawn much more sparingly than is otherwise customary. This is what *Sydenham*† found out by a diligent and repeated attention to these diseases; who also proposed it to others as a matter of the last consequence in practice.

S E C T. DCCCLXXXI.

A Pleurisy has for its cause, 1. Every thing that is disposed to generate an inflammation of another kind (§. 375. to 380.) 2. Whatever determines the said general causes to act chiefly upon the pleura; to which more especially belong the patients habit of body, having the intercostal arteries narrower or harder than usual; some disease antecedent that leaves a propensity to this malady, such as a schirrhous, or callus, of the pleura, an adhesion of it to the lungs, &c. to which add the nature of the prevailing

* Sect. VI. Cap. 111, pag. 332. † Sect. V. Cap. v. pag. 310.

prevailing epidemical distemper, a cold air rushing violently thro' narrow clefts upon the naked body, which before was greatly heated by exercise or by fire; the sudden drinking of very cold liquors in large draughts, when the body is in like circumstances; a very cold or freezing north wind in the winter. 3. Any translation of an inflammatory matter, whether ichorous or purulent, that was before predominant in the whole habit, or in some certain part, from whence by any cause it becomes removed and settled to the side, as in the measles, small-pox, vomica's or ulcerous swellings, large wounds or ulcers, of a considerable extent, and suddenly closed, the matter being drank up by the veins.

I.] We come now to speak of the causes of a pleurisy, which being, as we have already shewn, an inflammatory disease (which will also appear thro' our whole treatise of the distemper, and the various events of it to be hereafter described;) we may therefore refer to the causes of a pleurisy all those that are able to produce other inflammations, of which we treated at the numbers here cited.

II.] Now altho' there may be an inflammatory disposition already in the blood; yet another cause is required to fix the disorder rather upon the intercostal spaces of the side than elsewhere: to this may be referred the patients habit of body, &c. Anatomists teach us that there is great variety, as to the size and number of the same blood-vessels in different bodies, and that sometimes the arteries are found callous, cartilaginous, or even bony. Disorders of the like kind may therefore happen in the costal arteries, so as to cause an hindrance to the free motion of the blood thro' them; however it seems very probable that such hindrances very rarely happen in these vessels,

vessels, since the indurations of the arteries have been commonly found only in the larger trunks, and in those of a decrepid age.

Disease antecedent, &c.] That a schirrhous hardness often remains after violent inflammations, more especially in such parts as are of a glandular fabric, has been shewn before in our history of inflammation at §. 392. but we also remarked, in treating on a schirrhus §. 485. what wonderful indurations have sometimes been observed in membranous parts of bodies that have been opened. And at §. 843. it appeared, that the lungs do by inflammation often grow to the contiguous pleura; it will be therefore no wonder if the same adhesion follows from an inflammation in the pleura, as the dissections of those who have deceased of pleurifies inform us^z. But that such callous and schirrhous indurations, as well as concretions of the otherwise soft and lax parts, may be the cause of obstruction and inflammation, has been already proved at §. 112. No. 1. And from hence it is, that those who have had a severe pleurisy, are often troubled with pains of the breast at times, during the remains of their life, upon any sudden change of air, violent passion of mind, or hard drinking, &c. and this more especially when they have been afflicted more than once by the pleurisy. Accordingly *Schenck*^a relates to us out of *Brassavolus*, that Alphonfus duke of Ferrara, being thrice afflicted and cured of a pleurisy, remained afterwards liable to a pain in the same place, upon every slight occasion.

But *Diemerbroeck*^b remarks, that in the course of his practice he observed those who had signs of the lungs cohering with the pleura, fell oftener and easier into pleurifies than others: and experiences have taught us physicians, that those who have had a pleurisy

^z Triller. de Pleuritide pag. 6. ^a J. Schenckii observ. med. rar. Lib. II. pag. 245. ^b Anat. Lib. II. Cap. xiii. pag. 308.

pleurisy once, are more easily invaded by it a second time.

The nature of the epidemical distemper prevailing.] Altho' pleurifies often take their origin from evident causes, such as from a cold wind upon the body after violent exercise, &c. yet the most trusty observations have taught us, that there are also sometimes pleurifies which afflict most people who inhabit one place, at the same time, altho' there is no apparent cause known to which the origin of the disease can be ascribed. 'Tis indeed true that its afflicting many persons in common, and other circumstances (which we shall consider hereafter at §. 1404.) persuade us that the latent cause thereof resides in the air; but in the mean time nobody will easily determine the nature of that particular morbid quality, which occasions the spreading disease among the people; because there appears no sensible change in the qualities of the air, to which such an effect can be justly attributed. It did not without reason appear wonderful to *Sydenham*, that such epidemical fevers would sometimes afflict the head, at other times the stomach and intestines, at other seasons rather infect the pleura or lungs: but still he observed, what in practice must be of the last importance, that by sensible changes in the known qualities of the air, the epidemical constitution would sometimes change from its first disposition, and receive a tendency to affect other parts of the body. Thus when a fever raged epidemically, which affected the head, it happened that in the whole month of October an unusual warmth of the air succeeded, which was suddenly followed with a cold and wet season; from thence followed coughs, which afflicted whole families. Now these coughs paved the way to an epidemical fever, but so that when the fever was once formed after the cough, it infested the lungs and pleura rather than the head; and yet towards the cure, the same treatment was required as had before been used, when it invaded

invaded the head^c. 'Tis therefore evident, that the epidemical constitution ought to be attended to, as a cause in pleurifies.

Cold air, &c.] When persons are much heated by violent exercise, or even by the external influence of a great fire, we see the whole skin appears externally very red, which is an evident sign that the red blood then enters many of the smaller vessels from which it naturally ought to be excluded while the body is at rest, or in an air that is not excessively hot; therefore in this case happens an error of place, or an erroneous straying of the red blood (see §. 118.) If now those vessels are suddenly constricted by a cold air, and the parts of the blood more thickened or united into larger molecularæ, those gross or sluggish juices, which were driven into the extremities of the least vessels will there stick fast, and form obstructions, inflammations, and their consequences. All practitioners have observed frequent pleurifies to arise from this cause; no less than gout and rheumatisms, which have been very difficult of cure.

But a cold air is of all the most mischievous when it blows violently upon the naked body, thro' some cleft or small aperture, whereby its action and cold are rendered so much greater upon the body. 'Tis true indeed that the wind blown swiftly from a pair of bellows upon the ball of a thermometer, however moveable it may be, does yet not manifest any increase by causing the liquor to descend; but by the motion of such a wind upon our body, the shell or atmosphere of warm air and vapours that surround us, is swept away, and a cold air is applied in the room of it every moment; and from hence the sense and effects of cold will be increased. Hence it is that so many farmers, rustics, porters, and others accustomed to hard labour, perish of these distempers; because when heated by labour they rest idle, with the body almost naked, to take the cold of the air
which

^c Sydenh. Sect. V. Cap. v. pag. 305.

which seems to them so agreeable. Even *Sydenham*^a has judged that more persons perish by this cause than by the plague, sword, and famine put together.

Cold liquors drank suddenly in large draughts, &c.] There is even still more danger from this cause than from a cold air; and indeed I never observed pleurifies more severe, or suddenly fatal, than from sudden and excessive drinking of cold liquors, when the body has been much heated. The drinking of icy cold limonade, in a noble youth, who had heated himself at tennis, or some other play of the ball, excited, within the space of three hours time, a pleurisy that was fatal. *Diemerbroeck*^e observed, that a hay-maker, by drinking plenty of cold beer while he was in a violent sweat, by hard labour, in the midst of summer, immediately contracted a pleurisy that was in a few days fatal. The examples of this kind, which occur in practical writers, confirming the same thing, are innumerable: but the reason of this is evident; for the blood of a healthy person, drawn from a vein into cold water, instantly concretes into threads of almost a solid consistence. Now when plenty of cold drink is swallowed thro' the œsophagus, which descends in its course very near the trunks of the intercostal arteries, it is therewith filled or distended; and in like manner the whole stomach being also extended with the cold drink, instantly imparts the unusual coldness thereof to the adjacent diaphragm, liver, spleen, &c. The trunk of the ascending cava, and the large right sinus of the heart, incumbent on the thin tendinous part of the diaphragm, are affected in the like manner, by disposing the blood there collected towards a concretion, that will impede the passage which it ought soon after to make very suddenly thro' the lungs. 'Tis no wonder therefore if a fatal pleurisy or peripneumony so frequently and suddenly arise from this cause, any
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^a Sect. VI. Cap. i. pag. 325.
pag. 309.

^e Anat. Lib. II. Cap. XIII.

more than that inflammatory disorders of the like kind, should from thence invade the other viscera that lie contiguous to the stomach: but here the danger is increased, because a sweat being raised by violent exercise of body, the thinner parts of the blood are thrown off by vapour, while cold water, or the like dense liquors, are not so readily heated as air, by the natural warmth of our body. For our celebrated *Boerhaave*^f has demonstrated that a body heats sooner from the same degree of fire in proportion as it is rarer, or less dense.

From what has been said then it appears, that *Lancisi*^g has very justly pronounced, that an incautious use of the cold-bath, or cold-drinks, when the body is heated, have a good right to take place in the list of the causes of sudden deaths.

A cold freezing north wind, in the winter time.] Concerning this cause of a pleurisy we treated before at §. 879.

3. We observed a little before that a pleurisy is distinguished into original, and symptomatic or secondary; but what we have advanced under the two preceding numbers or aphorisms, relate to the causes of an original pleurisy; now therefore we are to treat of the causes of a symptomatical or incidental pleurisy. All diseases which change from their first nature by degenerating to another kind, are said to be made (*ἐκ τῆς μεταπτώσεως*) by a *translation*^h. Thus, for example, there is often an inflammatory disposition introduced throughout the blood in continual fevers, and from thence afterwards the respiration becomes difficult, quick, or short, and painful about the vitals, (see §. 734.) Sometimes again the phlogistic matter will remove from the part upon which it first settled, and take up its residence upon the intercostal spaces: thus a pain of the breast will frequently

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^f Chem. Tom. I. pag. 201. ^g De subitaneis mortibus Lib. I. Cap. vii. pag. 12. ^h Gorraei definit. medic. pag. 397.

quently terminate in a phrenzy, as we formerly observed in another place, §. 779.

Thus pleurifies of a very bad kind happen to child-bed women from a retention of the lochia, as we shall hereafter declare at §. 1329. Nor is a pleurisy in these only the result of a suppression in the flux of the red or sanguine purgations merely; but also of the more palid and ichorous discharges that second them; whence *Hippocrates*ⁱ observes: *quibus ex partu alba purgamenta retinentur cum febre, surditas & acutus lateris dolor, perniciose insaniunt.* “That
“ those who after the birth have a retention of the lo-
“ chial or white purgations, with a fever, deafness, and
“ sharp pain of the side, become perversely *delirious*.”

Thus in the small-pox *Sydenham*^k has observed, that altho’ the confluent sort hardly ever stay till after the fourth day, but commonly break out sooner, yet that sometimes a very sharp pain invades either in the loins or in the side, resembling that which attends a pleurisy, whereupon the small-pox are slower in their eruption; because, as it would seem, the matter of the disease, that should tend to the surface of the body, is arrested in other more interior parts: but that such symptoms more especially happen when those small-pox are treated with too hot a regimen. The same thing also succeeds in the measles; only there a dangerous peripneumony is instead of a pleurisy, as *Sydenham* hath in divers places shewn to us; but how many, and how different maladies may arise from a resorption of the matter into the blood, has been already declared in treating of abscesses at §. 406.

S E C T. DCCCLXXXII.

THE preceding history of a pleurisy (§. 875. to 882.) and the course of it hereafter to be explained (§. 883. to §. 907.) together

ⁱ Praediſt. Lib. I. No. 82. Charter. Tom. VIII. pag. 751.
^k Sect. III. Cap. 11. pag. 166.

gether with the dissections of bodies deceased of a pleurisy, plainly teach us that it is an inflammation sanguineous or phlegmonic (§. 371.) seated in the parts described (§. 877, and 878, and arising generally from an acute fever preceding.

Concerning the parts affected in this malady, we discoursed at large in the comment to §. 877. where we likewise mentioned the observations taken from bodies deceased of a pleurisy, which prove that a true inflammation was seated in the parts mentioned §. 877, and 878. It will also be evident from the progress of the disease following, that all the terminations of a phlegmon, either by resolution, abscess, gangrene or schirrhous, may take place in this disease: but an acute fever almost constantly precedes a pleurisy, at least for some hours; altho' we may in a manner except from hence that case in which a pleurisy arises of a sudden from cold drinks, taken by persons hot with exercise, or from a cold air violently blown upon the body.

S E C T. DCCCLXXXIII.

FROM the above mentioned sources (§. 881, to §. 882.) the history of this malady is plainly derived; for it frequently begins while the appetite to food is great, with a coldness, or shuddering, weakness, weariness, and a fever, which is preceded by a heat that insensibly rises to a degree of burning, with thirst and a total loss of the appetite; the pain in the mean time advances, from being mild or tolerable, to the greatest severity, by which the respiration becomes greatly injured: at length it rages, with a violent fever, that ap-

pears indeed less evidently from the confined or suffocated respiration, which the patient stifles, to avoid the severe sense of pain; from which circumstance the physician is often sadly mistaken, or deceived in the appearance; after this it terminates variously in event, according to the number of the causes, and more especially the different changes of inflammation before noticed (§. 386, to 393. and §. 492, to 500.) together with the nature of the part itself, in which the malady is seated (§. 877, 878.) having a regard to the circumstances of each of these particulars; but the conjunct symptoms are all of them worse as there are a greater number of the parts (877, 878.) affected at once, as the fever, or circulation of the blood and juices, is more violently increased (§. 92, to 102.), or as the first onset of the disease itself was more malignant, (§. 564, 567.) but more especially as the breathing and pulse, with the excretions, appear to be more vitiated and deviating from their natural states or conditions.

We are now arrived at the description of a pleurisy as taken from its appearances, which are remarkable either a little before the invasion of the malady, or while it is yet forming, and afterwards, thro' the course of the distemper: but a knowledge of these appearances all together form the diagnosis of our distemper. These the celebrated author of the aphorism has collected from his own observation; and they are also to be found under a like description by *Sydenham*¹. It is sometimes preceded with an extraordinary appetite, which occasions some wonder at a sharper hunger than usual, while as yet nothing of

¹ Sect. VI. Cap. III. pag. 330.

of the malady is perceived; but soon after the patient begins to grow chilled and weak, while all the other symptoms advance, which usually accompany the beginning of a fever; but as yet there is no apparent sign of a pleurisy. However a pain soon after invades one side or the other, sometimes the back, or the fore part of the breast, and all those spaces which were recounted at §. 877, yet the period of time is uncertain when the said pain follows the fore-mentioned symptoms; for it follows sometimes sooner, sometimes later. I have sometimes remarked the pain to be sharp enough within the first hour of the invading malady; and on the contrary, in the vernal pleurisies of the year 1729, the pain came upon the second day of the disease; and altho' it proved not very severe, all that were seized therewith were in great danger. That thick or turbid urine which we formerly compared to the stale of cattle (see §. 734.) attended here from the beginning of the disease; then the pulse became unsettled or wavering, and soon after followed a delirium, a rattling in the throat or breast, and then death. Now altho' the pain, when it is considerably sharp, denotes great danger, and demands speedy relief; yet we are not to be over confident, altho' there may be but little pain urging in the beginning of the malady: for thus I saw a pleuritic man who had only a slight pain on the first day of the disease, and yet he perished on the fourth day with all the signs of a formed gangrene, altho' powerful and ready helps were given him. *Hippocrates*^m also seems to have observed pleurisies of the same sort, and equally dangerous, where he tells us: *quod si per initia molles quidam detinuerint dolores, post quintum vero & sextum diem acuti, illae ad duodecimum (diem) finiuntur, & non admodum effugiunt: periculum autem maximum est usque ad septimum (diem) imo ad duodecimum; post hos autem sanantur. Quae vero ab initio quidem molles sunt,*

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post

^m De morbis Lib. III. Cap. xv. Chart. Tom. VII. pag. 590.

post septimum autem & octavum acutae; ad decimum quartum diem decernunt & sanantur. “But if thro’

“the beginning, or first stages of the malady, the
 “pains are moderate, but acute after the fifth or
 “sixth day, such pleurifies commonly terminate by
 “the twelfth day, and the patients do not very often
 “escape; but the time of their greatest danger ex-
 “tends to the seventh, and to the twelfth day; but
 “after those times they recover: but those pleu-
 “rifies which have their pains mild in the beginning,
 “and severe after the seventh or eighth day, come
 “to a crisis upon the fourteenth day, and are cured.”

The like admonitions are given us in his coan præ-
 fagesⁿ.

But when this pain has once invaded, the breath-
 ing is greatly injured; for at the time of the inspi-
 ration the ribs must of necessity be drawn asunder
 one from the other, and by this the inflamed parts
 will be stretched or extended so as greatly to increase
 the pain. Upon this account such miserable patients
 hardly breathe air sufficient to dilate the lungs, where-
 by the right ventricle of the heart becomes unable
 to empty itself with due freedom. The blood there-
 fore returning from the head by the jugular veins,
 cannot now find any admittance into the right sinus
 and auricle already full: from thence the internal parts
 of the encephalon are compressed by the turgid ves-
 sels, whence such patients become dull, stupid, and
 less sensible of the pain, and while the lungs are gra-
 dually more and more over filled with blood, they
 soon expire suffocated, while the unskilful, hearing
 no more complaints from the patient, imagine that
 the disease is rather better when it lies at the highest
 point of danger: now the pulse which was before
 quick, full, and hard, begins to grow soft and small;
 and sometimes it beats slower, but not often, for ge-
 nerally this kind of pulse beats quick, as it is weak;
 see what has been said at §. 807, where we treated
 more

more particularly of the consequences which follow an impeded dilatation of the lungs by inspiration in an inflammatory quinsy: for it must be remarked that pleuritic patients perish in the height of the distemper, not from the inflammation of the pleura, nor of the parts incumbent on the ribs, but are suffocated by a repletion or oppilation of the lungs, for want of a free respiration.

Afterwards it terminates variously in event, &c.] All that we have advanced concerning the different terminations of a phlegmon at the numbers cited in this place, are equally true of a pleurisy; and we shall presently see in what manner it requires a variation or difference in its treatment towards a cure, according as the event will be either a kind resolution of the inflammation, a suppuration, or a gangrene, &c.

But the nature of the part itself, in which the pleurisy is seated, deserves to be considered: for if only the outward incumbent parts upon the breast are affected, the danger is less, and there is more reason to expect an outward discharge for the matter, if a suppuration ensues; whereas the contrary may be expected when the disorder is more deeply seated. Add to this, that the greatest danger of a pleurisy lies here, that from the severity of the pain the freedom of inspiration is suppressed or impeded: but in physiology it was demonstrated^o, that the first rib being fixed or held firm by the subclavian muscle, the nine following are drawn upward at the time of inspiration, and turned in some measure more outward; but in such a manner that their motion appears more evidently in the middle of the arches of the ribs than towards the sternum, or towards the vertebræ. Hence therefore a pleurisy seated in the side or intervals of those arches, will, cæteris paribus, excite the greatest pain. At the same time 'tis hence evident enough, that a pleurisy is so much the worse,

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as

as it extends into more of the places before enumerated §. 877, 878.

As the fever or circulation is more violently increased.] What the maladies are which arise from too great a velocity of the circulation of the humours has been declared at the numbers cited in the text; but also in the history of inflammation, §. 386, 387, 388. it was said that a kind resolution of a phlegmon could never be expected, when the motion of the humours thro' the vessels is too much accelerated; for in that case an abscess or a gangrene must always be feared; which is therefore true likewise of a pleurisy, in as much as it is an inflammatory disease.

Or as the onset, or beginning of the disease itself, was more malignant.] For we have seen that a fever is a constant partner with a pleurisy (§. 875.); and this fever, as we have shewn, often holds a considerable time before the pain of the side is felt. By the beginning of the disease therefore in this place, is understood the acute continual fever that often goes before, but always accompanies a true pleurisy; but this fever is not always alike in different epidemical constitutions, as *Sydenham* hath well observed to us in divers parts of his works, and particularly in a pleurisy he has taught that this is to be diligently remarked^p. Therefore as this fever injures a greater number of the functions, as it sooner exhausts the vital strength, and as it is afterwards followed by worse symptoms, so much the more dangerous will be the pleurisy: but concerning those signs by which the greater or less malignity of an acute continual fever is known, we have treated before at §. 734.

As the breathing and pulse are more vitiated.] For on these depends life, on which account they are usually called vital: but here we have a disease which by its own nature is injurious to the breathing; and the degree or magnitude of the disease is justly estimated from the greater or less impediment which the breathing

breathing suffers from it. Now for the blood to pass freely from the veins into the cavities of the heart, and to go on from thence thro' the arteries, requires in man, after the birth, that there be an open or free course thro' the lungs, by which it may go from the right to the left cavities of the heart; which course supposes an alternate expansion and contraction of the lungs, as necessary parts of the vital respiration: if therefore the breathing in a pleurisy shall be so far impeded as to hinder this free course of the blood thro' the lungs, the pulse will be rendered quick, but small at the same time; and when the disorder is further increased, it will begin to intermit, and then death is often suddenly at hand. Hence it is that Galen^a has pronounced: *maximum sanè indicium lethalis pleuritidis est, si pulsus sit valdè durus, & simul parvus, & ob ambo haec, caloremque, creberrimus: nullus servatus est pleuriticus cum tali pulsu.* “Tis
 “indeed the greatest sign of a fatal pleurisy, for the
 “pulse to be very hard, and small at the same time;
 “and from both those causes, with a febrile heat, to
 “be likewise very quick; for no pleuritic patient
 “escapes with such a pulse.”

Also the excretions.] Namely those of urine and stool. But here more especially a regard must be had to the spittings, which inform us much concerning the state or nature of the disease, whether it will be fatal or salutary: but on this we shall treat more particularly hereafter, at §. 901.

S E C T. DCCCLXXXIV.

A Pleurisy terminates either in a cure, in other diseases, or in death.

This is a circumstance or restraint, which a pleurisy has in common to itself, with all other diseases; and concerning this, we treated at §. 591.

S E C T.

^a De Praesag. ex pulsibus Lib. IV. Cap. v. Chart. T. m. VIII. pag. 299, 300.

S E C T. DCCCLXXXV.

IT terminates in a cure, by the assistances of art or nature, while the malady is as yet simple, or in its beginning.

In another place, at §. 587. where we treated upon the effects of a fever, it was proved, that sometimes the fever itself subdued or digested the impacted or hesitating matter, which resisted the equability of the circulation thro' the vessels. If now the obstruction in the intercostal vessels be so slight, and the febrile motion so sedate, as not to drive the hesitating lentor farther into the extremities of the converging vessels; but by a sort of mild attrition, or concussion only against the sides of the vessels, resolves it into its former condition of a fluid, an entire or perfect cure then follows by resolution, and that often without any assistance from art: but again, frequently the art of healing enables nature to perform that cure happily, which nature of herself never would have been able to do; for since faithful observations have taught us those conditions under which the patient remains while the disease is cured by the conduct of nature only; we therefore know how to use our endeavours by art to produce the same when they are absent. Thus for example, as to such a happy and natural cure there is required but a moderate degree of violence in the fever; or, if the same shall appear too intense, art endeavours by blood-letting and other remedies, (§. 610.) to lessen the exorbitant motion of the fever: but as we observe this natural cure succeeds most easily in persons of a more relaxed habit; therefore art endeavours by foment, liniment, &c. so to relax the vessels of the painful side, that they may more easily yield to a dilatation by the impelled fluids, and thereby afford the hesitating matter of the arteries, a passage thro' their narrower, but thus enlarged.

larged extremities into the veins; which is a circumstance required to the resolution of an inflammation.

But all physicians who have treated upon this painful malady agree in this, that the cure of it can be expected from art only, when the most effectual remedies may be applied in the beginning or first stage of the disease; for when the pleurisy has continued three or four days before the assistances of art are called to its relief, it seldom or never is cured by an innocent or mild resolution; but in such cases the violence of the malady usually gives rise to other disorders, which fix themselves in the body, and more especially in the lungs, as will hereafter be made to appear.

S E C T. DCCCLXXXVI.

WITH the help of nature, a pleurisy is cured either by a mild resolution, or by a concoction and excretion of the matter of the disease.

Either of these two are the methods of cure which take place when the malady is carried off by nature only: for the matter which stuck imperviously wedged into the ends of the arteries, being resolved into such small portions as it was first composed of by concretion, becomes thereby capable of flowing with the other humours thro' the vessels; or else it so far relaxes, and alters its consistence, that it may return back from the converging streights of the vessels, but with such condition as will not allow it to be assimilated to the other healthy juices; for which reason it must be thrown out, by some excretion from the body, in order to the return of perfect health.

See here what has been said relative to this subject in the history of a fever, § 594.

S E C T. DCCCLXXXVII.

BUT if the proper causes concur, (§. 386, 401.) the pleurisy may terminate by a resolution; and then the kind disposition of the symptoms informs us, that nothing remains to be done by art for the relief of the distemper, more than a thin, light diet, with the mildest aperients, and an emollient fatus.

There is, as we before declared. §. 882, an inflammation present in every true pleurisy; and therefore all the requisites to a resolution of an inflammation, of which we treated §. 386, are applicable to this place: but we know those requisites attend which give us hopes of such a resolution, from the kindly disposition of the symptoms. For if a patient thus afflicted is of a lax and moist constitution, while the pain is moderate, without much impeding the respiration, and the fever slight without any great hardness of the pulse, nor other symptom that points out injuries in the other functions, but the excretions remain nearly in their natural conditions; these all declare for the cure of a pleurisy by a mild resolution: here then there is no occasion for blood-letting, at least in any great quantity, since there is no exorbitant motion of the fever above what is sufficient to subdue the cause of the malady. Nor is it any objection to this that we formerly observed (at §. 883.) pleurifies to be sometimes dangerous when in the beginning of the malady there was only a slight pain felt; for in that case there are other concomitant signs, which plainly point out the malignant disposition of the disease; as the thick urine that forms no sediment, the fluctuating or unsettled pulse, the rattling or wheezing in the breast, &c. which shew the greatest danger.

In the mean time 'tis but prudent and requisite for the physician to often visit the patient in the beginning of such a pleurisy, and use all his endeavours to find out whether the malady keeps to the same disposition; or whether the pain or other symptoms increase, in which case another method of cure must be followed: for it is a prudent admonition of *Galen*^r: *si aeger primo die habet manifestissima salutis signa, huic omninò in primo quaternario finietur morbus. Utrum vero per crisin, vel solutionem, magnitudine & parvitate distinguitur. Magni enim morbi judicantur omnio; qui autem parvi, solvuntur solum.* “ If the patient on the first day of the disease has the most evident signs of health, the malady then terminates within the first four days; but whether it will be by a crisis or resolution is judged by the magnitude or smallness of the malady; for violent distempers always come to a crisis or critical evacuation; but small ones go off insensibly, or by resolution only.”

In these moderate circumstances the best remedy is to use no medicines at all, only to keep up the patients strength with a light thin diet, and to supply the blood plentifully with diluent attenuant liquors; to foment the painful parts with the most emollient remedies, that the vessels rendered easily dilatable may transmit the hesitating matter. Forms for these purposes may be seen in our author's *materia medica* at the number of the present aphorism.

S E C T. DCCCLXXXVIII.

A Pleurisy is cured by a concoction and excretion of its morbid cause, more especially when the following signs are observable.
1. When the piles at a seasonable time make a discharge of the proper fluids in a quantity sufficiently

^r Lib. III. de Crisibus Cap. iv. Charter. Tom. VIII. pag. 433.

sufficiently large: 2. When there is plenty of a thick urine that forms a sediment, and gives some pain in its discharge, the hypostasis or bottoms appearing reddish and mixed with white, discharged before the fourth day, with relief to the symptoms; which kind of urine has cured the dry pleurisy: 3. If the bowels are taken with a flux, that discharges plenty of a yellow bilious matter, with relief to the symptoms, before the fourth day: 4. If abscesses (§. 837 to 843.) break out behind the ears, upon the thighs, or other parts, before the beginning of the sixth day; and, turning ichorous, purulent, or fistulous, continue making suitable discharges for a long time after: 5. If the pain of the side removes to the shoulder, arm or back, with a numbness or heavy sense of the pain in those parts: 6. If there be a spitting, in a measure free and copious, (one that is relieving, and not from a defluxion or cold) immediately whitish, or soon resembling matter, and holding on, before the fourth day, or immediately returning again if it be suppressed; for with such a spitting the patient recovers by the ninth or eleventh day.

It follows now that we consider those ways by which a pleurisy is cured with the assistance of nature only, by a concoction and excretion of its cause.

I. There are observations sufficiently numerous made upon acute inflammatory diseases, as also upon pleurifies, which teach us, that the material cause of the malady may change its place, and take up its residence in other parts of the body, oftentimes very suddenly. Thus sometimes I have observed a like dangerous translation of the pleuritic matter towards the

the head, the pain of the side then wholly ceasing; but the head being set at liberty, the pleurisy has returned to its first seat: but it seems to happen in the same manner, that this material cause of the disease changing its place, does by the help of nature often find of itself an exit thro' the open vessels of various parts, and outlets of the body. Thus *Aretæus*^s treating on a pleurisy, having first recounted the appearances which happen to the disease with a bad tendency, says, *at si in melius vergat, sanguinis e naribus eruptio cum impetu, tumque repente morbus solvitur*: "But if it changes for the better, there follows an eruption of blood with some violence from the nose, and then the malady is soon resolved." In this he is supported by *Galen*, as we remarked before (§. 830. No. 4.) for after having informed us that a bleeding at the nose indeed resolves a phrenzy, but that a lethargy and peripneumony give no way to that discharge, he adds: *inter ipsas autem pleuritidis medium locum obtinet: minus enim quam peripneumonia & lethargus profluvio sanguinis solvitur*. "But among these a pleurisy holds a sort of middle place; for it is resolved by a less flux of blood than a peripneumony or a lethargy^t." But *Triller*^v very well remarks, that by the assistance of nature pleuritics generally escape, even without blood-letting, if there does but happen a copious flux of florid or purple blood from the nose, between the first and the fifth day. This is what I have sometimes myself observed; and even later I have seen an hæmorrhage from the nose give much relief to the disease, altho' no perfect resolution; but so the malady may run afterwards to a great length, and require many other evacuations before it can be cured.

Now the same advantages may be justly expected from a like discharge of blood, by the hæmorrhoidal vessels,

^s De causis & signis morbor. acut. Lib. I. Cap. x. pag. 9.
^t De Crisibus Lib. III. Cap. 111, Charter. Tom. VIII. pag. 430.
^v De Pleuritide, pag. 7.

vessels, as *Triller* ^w hath also remarked: but perhaps this is a discharge seldom met with, at least in most of those whom I have attended in pleurifies, I have not known one who had a resolution of the disease by a flux from the hæmorrhoidal vessels; yet the ancient physicians admonish us that the piles are a preservative from a pleurisy, and that from an unseasonable suppression of them a pleurisy will very often follow. Thus *Hippocrates* ^x tells us: *qui hæmorrhoides habent, illi nec pleuritide nec peripneumonia, &c. corripiuntur.* “Those who have the piles are neither invaded by pleurisy or peripneumony, &c.” *Galen* ^y also testifies that he has seen many infested with a pleurisy from a suppression of the hæmorrhoidal flux; and therefore ’tis not without reason that physicians of the greatest note advise us to have a regard to this evacuation in the present malady.

II. *Hippocrates* ^z has admonished us that; (*urina subrubra in pleuriticis, habens leve sedimentum, securam judicationem significat.* “A pale reddish coloured urine, with a light sediment in pleurifies denotes a sure crisis.” But here he seems to intend it as a sign of a good concoction, rather than for the evacuations of the whole matter of the disease compleated: but in the mean time if such a urine flows plentifully, and forms generally such a sediment, with relief to all the symptoms, we are then sure the matter of the disease is discharging itself; and we have more especially hopes that the malady will be thus terminated if this happens in the beginning, before many of the humours and vessels are vitiated from their healthy condition by a long continuance of the disease; for if this kind of urine happens late in the distemper it seldom goes off by urine only. This is what I observed in the pleuritic patient that I mentioned at §. 587, where we treated

of

^w Ibidem. ^x De Humoribus Textu XXVI. Charter Tom. VIII. pag. 576. ^y Comment III. in Lib. Hippocrat. de alimento. Charter. Tom. VI. pag. 271. ^z Coac. Praenot. No. 586. Charter. Tom. VIII. pag. 887.

of a crisis; who on the sixth day of the distemper evacuated an incredible quantity of urine, not only with ease, but with a kind of pleasure; and altho' the discharged urine had so large a proportion of a laudable sediment, yet it only gave a considerable relief to the malady, and was far from making a compleat cure: see here what we said upon such a urine at §. 834, No. 4. where we treated of a peripneumony.

III.] Concerning the nature of this matter, and why it is called bilious, you may consult what was delivered in the comment to §. 830. No. 3. *Aretæus*^a has also remarked that sometimes in a pleurisy there is a salutary flux or discharge from the bowels; even he seems to applaud a much greater commotion or disturbance of the bowels than a mere flux, since he uses the phrase (κοιλίης ἐκλαράσχευσεως σχολωδίων) “*commotive or disturbing fluxes of the bowels that appear bilious*,” also in treating on a peripneumony^b, cured by the like discharge, he uses the word (ἐκτάραξις) commotion or disturbance: but *Hippocrates* on this occasion uses words that only denote a moderate and gentle discharge by stools, as we observed before at §. 830. No. 3. Sometimes I have seen a discharge like this, from the intestines, has been a considerable benefit, even after the fourth day of the pleurisy. And *Aretæus*^c seems to have remarked the same; for to the former passage he adds, *si autem a secunda hebdomade hæc inchoantur, decimo quarto die sanantur*. “But if these fluxes or purgings begin within the second week of the malady, then the sick recover by the fourteenth day.” However it must also be observed that sometimes in the beginning of pleurisy there is a symptomatical flux from the bowels, that is prejudicial or often dangerous, and gives not the least relief to the symptoms of the pleurisy: there-

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fore

^a De caus. & sign. morb. acut. Lib. I. Cap. x. pag. 9. ^b Ibidem, Lib. II. Cap. i. pag. 11. ^c Ibidem, Lib. I. Cap. x. pag. 9.

fore to this discharge that is about to be salutary, *Aretæus* ^d subjoins, *respiratio conquiescit, mens recte se habet, febres minuuntur, cibos appetunt.* “ The
 “ breathing grows tranquil, the mind acts rightly,
 “ the febrile symptoms abate, and the sick gain an
 “ appetite to foods.”

This is the reason for which the very learned *Triller* ^e condemns such a symptomatical flux, or diarrhæa as dangerous, and for the most part fatal, when it supervenes in the beginning of a pleurisy; but that it has often proved salutary in the course of the distemper, when the more violent symptoms have once abated, he has confirmed to us by observations, both of his own and others.

IV.] Concerning these abscesses we treated in the chapter of a peripneumony, at the numbers mentioned in our text.

V.] Trusty observations have taught us, that the morbid matter of acute inflammatory distempers often changes its seat or residence; and that the event of such a removal, or translation, is judged good when it lodges itself upon a part of the body where it may lie with less danger than before. Thus in our history of a phrenzy, (§. 779) we observed, that a supervening pain upon the breast, lower limbs, or a violent cough, often terminate that malady; as in that place we demonstrated by many instances, out of the books of *Hippocrates's* Epidemics: but in our history of a quinsy it was proved (see §. 809.) that the material cause of the malady very frequently changed its seat, and removed to other parts: but at the same time we shewed that this removal was not always happy in its event, even tho' the matter of the distemper should be derived to parts very distant, and seemingly less dangerous. 'Tis therefore a careful observation of the whole course of the malady only that can inform us, whether such

a

^d Ibidem.

^e De Pleuritide, pag. 5.

a metastasis, or removal, will be profitable, and towards which part of the body it may be safely made.

'Tis true indeed, that in a pleurisy there is great danger, more especially for that the violence of the pain hinders the inspiration, and thereby endangers a suffocation; or if the distemper comes short of that, being incapable of a resolution, there is the danger of an incurable suppuration, or a fatal empyema. Here, therefore, great advantages may be expected, if the matter of the disease should happen to change its place; and it is to this intention that *Hippocrates*^f seems to have directed his treatment, when he advises in the cure of a dry pleurisy, after blood-letting, and other remedies, to cover the affected side, (*fomentis tepentibus extrinsecus admotis, ut morbus per totum corpus dispergatur*) “with warm
“fomentis outwardly applied, to scatter or disperse
“the disease throughout the body.” But it is evident, from faithful observations, that the consequences will be very different, as to the happiness of the event, according as to which the parts are that this metastasis or translation is made. Accordingly *Hippocrates* g pronounces, *metuendas esse illas pleuritides in quibus dolore sursum vergunt*: “that those pleurisies are to
“be feared in which the pains remove upward.” The like he also gives us in another place^h. This is also confirmed by what we observed at §. 772, upon such a metastasis, occasioning a symptomatic phrenzy.

But I have likewise observed the pain go from the side towards the lower part of the abdomen, without any good consequence; for, within twelve hours after, the pain has returned again to the side, and in a degree much more severe than at first. In a robust pleuritic man, on the thirteenth day of the disease, when all things seemed to incline for the better, a severe pain suddenly arose in the left foot, without any

E 2

redness

^f De morbis Lib. I. Cap. xi. Charter. Tom. VII. pag. 547.
^a Coac. Praenot. 381. Charter. VIII. pag. 873. ^b Coac. Praenot. N. 73. Charter. Tom. VIII. pag. 856.

redness or swelling; here the urine was made thin, and after a few hours the patient turned delirious, lay speechless, and at length expired. On the contrary in another man, who after two large blood-lettings had warm fomentos, &c. applied all night to the side, the pleuritic pain greatly abated, and on the fourth day of the malady a violent pain arose about each of his great toes near the metatarsus or instep, whereupon the pain of the side and fever instantly went off, and the patient happily recovered. Here we are to observe, that this man never had been before troubled with the gout; nor as far as ever I could hear, was he afflicted with that distemper afterwards. But how different are the events of these two metastases, or translations to the lower parts of the body!

But when the pain invades the back, shoulder, or arm, while that of the pleuritic side evidently abates, it makes a joyful prognostic, and allows the patient almost universally to recover: at least I remember not to have seen one pleuritic person who perished by the disease, when such a metastasis was made to those parts. The very learned *Triller*ⁱ has confirmed the same thing by his own observations. It may perhaps be worth remarking that these critical pains happen ofteneft upon the sixth day of the disease, at least thus I find it upon reviewing the histories of pleuritic patients, that have been committed to my care; and under *Triller*, five out of eight patients who had these critical pains, perceived them thus changing the disease upon the sixth day: but observe that this metastasis does not appear of itself to cure the disease; but is rather a messenger proclaiming a salutary crisis.

Hippocrates seems to have remarked that those symptoms sometimes occur in pleuritic persons; but without informing us that they afford almost a certain
presage

ⁱ De Pleuritide pag. 5. Et in historiis aegrorum ibidem pag. 69. 77.

prefage of the patient's recovery: for his words are ^k, *quod si dolor quidem ad claviculam sui det signum, vel ad brachium gravitas, aut circa mammam, aut supra septum transversum, secare juvat internam cubiti venam, neque copiosum sanguinem detrabere cunctandum est, usque dum multo rubicundior, aut pro puro & rubicundo lividus fluat, utrumque enim contingit.* " But " if a pain affords a sign, at the clavicle of its own " side, or invades with a dulness about the arm, " breast, or above the diaphragm, it will be of service to cut open the internal or great vein of the " arm, and without any hesitation to draw plenty of " blood, until instead of (buff or) livid you find it " come much more red, or 'till instead of sincere " or florid, it flows out livid; for both these conditions of the blood are observed in pleurifies."

After the same manner he recommends venesection for the like case in another part of the same book ^l: yet I have seen a happy cure of this malady, and am therein backed by the observations of Triller, when no blood-letting has been used after these critical pains of the arm, back, or shoulder, have attended. But still in the same book of Hippocrates, there is another text ^m, which seems to inform us that he expected a good event from a pain about the clavicle in a pleurisy; for he says, *at sectio venæ non similiter dolorem solvit, nisi dolor ad claviculam pertingat.* " But opening a vein does not in the like manner cure the " pain, unless the same extends to the clavicle."

There may possibly be other salutary translations in pleurifies, of certain epidemical constitutions: for thus Baglivi ⁿ assures us, that in the various hospitals of Italy, he observed, all pleuritic patients recovered, who were invaded with a pain in the parts of the internal ear, followed afterwards with an abscess, and a discharge of matter: and this he remarked more

E 3

especially

^k De Acutor. victu. textu 10. Charter. Tom. XI. pag. 41.

^l Ibidem pag. 159. ^m Ibidem textu 8. pag. 41. ⁿ Prax. Med. Lib. I. Cap. ix. pag. 34.

especially at Rome, when very severe pleurifies were there popular, after a very hard winter.

VI.] How important the ancient physicians made a discharge by spitting, in diseases of the breast, is plain from the accounts given at §. 830. No. 2. where we treated of a peripneumony, often happily cured by this evacuation. Now it is evident from passages there alledged from the ancients, that they observed the like effect from a spitting in a pleurisy. For thus *Aretæus* ^o praises a spitting in this malady when it begins on the third day, comes up easily, of a light, uniform, fluid and round consistence. We have seen before that the ancients (§. 876.) esteemed dry pleurifies the most difficult of all to cure; and that *Hippocrates* judged this excretion to be proper to a true pleurisy (§ 878.) from pronouncing that a bastard pleurisy never discharged itself by spitting. And altho' *Sydenham* ^p seems not to have confided much in expectorations of the matter of the disease in a pleurisy, but rather chuses to forward the cure by blood-letting, yet in relating the pleuritic symptoms he confesses ^a " that the fever with all the fatal symptoms
 " attending it, namely, cough, spitting of blood,
 " pain, &c. gradually abated in proportion as there
 " was a more free expectoration of the matter of the
 " disease." But for the parts affected in this malady, he assigns the pleura, or intercostal muscles, concerning which we treated before at § 875.

But it has been a seeming difficulty to the understandings of some, how the matter of a pleurisy could be evacuated by a spitting discharged from the lungs, unless the lungs were also affected; since the impacted matter was lodged in the side. Now altho' it is sufficient for a trusty physician to know that the matter of the disease is really thus evacuated without plainly understanding the manner or the ways whereby it is brought about; yet we are over and above this taught by numerous observations, that the contiguous
 lungs

^o Morb. Acut. Lib. I. Cap. x. pag. 9.
 III. pag 337.

^a Ibidem pag. 331.

^p Sect. VI. Cap.

lungs imbibe the offending humours into their substance, and afterwards throw them out by a cough. Thus *Galen* ^r has observed that mead or an emulsion of honey, injected into the capacity of the thorax, is spit out thro' the lungs; and in confirmation of the same thing, he observes in an other place ^f that when bones are fractured, often without injuring the skin that covers the fracture, there is a transfusion of blood sufficient to strain the bandages, although the skin be a membrane much denser than that which covers the ribs. But *Diemerbroeck* ^t also assures us, that in those afflicted with an empyema, after making the paracentesis of the thorax, he has thrown in bitter and absterfive injections, which they have tasted in the mouth, and brought up a good part of them by spitting. Moreover *Helvetius* ^u has made an observation, that it is a production or continuation of the pleura that forms the outward and inward membrane, or covering of the lungs. Can there be any difficulty then for the matter, now concocted and rendered fluxile, to make its way slowly, thro' the continuous membranes and cellular substance of the lungs, into their bronchæ or air-pipes from the pleura? or may not also the contiguous surfaces of the lungs, which after a pleurisy are generally found growing to the pleura, immediately imbibe the said matter into themselves? In this respect *Cælius Aurelianus* ^w has well pronounced, *Et tussita itidem sputa per pulmonem feruntur, siquidem in ipsum veniant ex vicinis, accepta per vias mentesensas, quas λογοθεορήτας appellant*: “ and the
“ said matters are carried thro' the lungs, and cough-
“ ed up in spittings, whenever they are derived into
“ the lungs from the adjacent parts, from whence
“ they are received by passages seen by reasoning or
“ effects, which passages some call *expectorant*.”

E 4

But

^r Meth. Med. Lib. V. Cap. viii Charter. Tom. X. pag. 115.

^f Comment. 3. in Librum Hippoc. de articulis text. 58. Charter. Tom. XII. pag. 394.

^t Anatom Lib. III. Cap. xiii.

pag. 307. ^u Academiæ des sciences 1718. mem. pag. 25, 26.

^w Acutor. morbor. Lib. II. Cap. xvi. pag. 116.

But in the mean time the laudable industry of the celebrated *Lancisi* seems happily to have discovered ways by which the matter of the disease may pass into the lungs directly from all parts which are infested with a pleurisy, and be from thence discharged by a spitting. For in his epistolar dissertation *de vena sine pari* * he remarks, that the mouth of the *vena azygos* opens into the cava, armed with a sort of muscular semicircle like an hemisphere, and a peculiar nerve; moreover this insertion of the *vena azygos* into the cava is made before the wind-pipe, under the sternum, before the division of the trachea into the two large branches of the bronchia; and in the same place the trunk of the *vena azygos*, and part of the *vena cava* are connected to the wind-pipe, not merely by a simple or cellular cohesion, but by strong fibres and small vessels which penetrate even into the inner surface of the trachea, as *Lancisi* discovered by a fair experiment: for he made a ligature upon the *vena cava*, above and below the part where it was entered by the *vena azygos*, and having first discharged the blood, he injected warm water tinged with saffron, through an opening in the trunk of the *azygos*; and immediately he perceived the yellow water flow out through the mouth and nose, as the head of the dead subject hung down from the table. But moreover the wind-pipe being slit open, all the way from the thyroide cartilage, he perceived, by renewing the injection, that the yellow liquor exciting little bubbles distilled through most minute orifices from the inner surface of the upper part of the wind-pipe, which lies under the insertion or communication that it makes with the *vena azygos*. By another experiment, he afterward proved, that like ducts much more numerous and patent opened into the trachea from the *azygos*, which there adheres with part of the adjacent cava, and likewise with the wind-pipe.

If

* Habetur in Editione Romana secunda de motu cordis & aneurysmatibus, pag. 373. & in adversar. Anatom. V. morgagn. pag. 79.

If now we consider the appearances which happen here in pleurifies, there will be good reason to suspect, that the matter causing the malady may, by these ways, be discharged into the wind-pipe, when once it is become concocted and moveable. *Lancisi* observed often, that the pleuritic patients before the fourth day expectorated a bloody matter, which afterwards appeared white and concocted; and that they did not draw up this from the bottom of the breast, but pointed out to him the said place where under the sternum the vena azygos opens into the cava.

But then the following difficulty seems to attend this opinion; that the blood contained in the vena azygos, may more easily pass through its opening into the cava than be urged through the narrow ducts which open from that vein into the wind-pipe. But yet if a greater resistance is made at the opening of the said azygos to the blood that is to pass that way; in that case this course becomes practicable. Whether the apparatus resembling an half sphincter at the opening of the azygos be able to shut it? Or whether from the impeded respiration in a pleurisy, when the lungs are very difficultly able to transmit the blood, the vena cava being more distended is not freely enough able to receive the blood from the vena azygos? *Lancisi* himself being sometimes afflicted with pains and defluxions of the breast from his advanced age, perceived by a sensation that the major part of the concocted spitting came from the part above-mentioned, and not from the bottom or extremities of the lungs; and he believed himself able, by a use of the triangular muscle of the sternum, to make an easier discharge or expectoration of the humour.

Now whether the matter of the distemper dissolved and rendered fluxile enters the contiguous lungs thro' the pleura, to which in these maladies they often cohere; or whether it passes through branches of the vena azygos into the wind-pipe, or into the vena cava,

cava, and thence passing through the right cavity of the heart into the lungs, finds a way through the pulmonary cells and air-vessels, (the possibility of which we proved before, at §. 830. No. 2.) 'tis certain from practical observations, that by some or all of these ways pleurifies are cured by spittings. But then it is not every spitting that relieves this malady: and therefore it is our business to see what are the conditions necessary to a spitting; by which we may reasonably expect from it a cure of this distemper.

The spitting must be copious, free, and easy of expectoration;] for there is otherwise continually some quantity of the mucus swept off by a cough, which naturally lines the internal surface of the wind-pipe; but then this takes nothing from the cause of the malady. But if the flux by spitting lessens the pain and other symptoms, by which the patient evidently finds relief, we then know that it lessens this cause. Hence *Hippocrates*^y lays down this as a general rule, (which we observed before in our history of a peripneumony §. 830. No. 2.) “ That all spit-
“ tings are bad which do not relieve the pain; but
“ such as have that effect are of all the best.”

Not from a cold or defluxion.] For when there is a coryza or defluxion from a checked perspiration, there is frequently a copious discharge by spitting, but such as will give no relief to the material cause of a pleurisy, only evacuate the mucus of the catarrh. It seems also that *Hippocrates* would intimate this to us, when in treating upon the good and bad spittings that appear in diseases he subjoins^z, *Coryzas autem & sternutationes in omnibus circa pulmonem morbis, & præcessisse & consequi, malum*: “ But sneezings and
“ defluxions from colds, make a bad sign in all dis-
“ orders of the lungs, whether they come before or
“ follow after.”

Imme-

^y In Prognostic. sentent. 51. Charter. Tom. VIII. pag. 645.

^z Ibid. sentent. 49. pag. 643, & Coac. Praenot. No. 399. ibi-
dem pag. 875.

Immediately white, soon purulent, or such before the fourth day.] We have before treated largely of these spittings, and endeavoured to give a reason why they are called purulent or pus like, even tho' they may have a different colour, and why they ought speedily to turn whitish. See the commentaries to §. 830. No. 2. I have often seen that this white, concocted, or pus-like spitting, has cured the pleurisy: and even in a woman advanced into the fifth month of her pregnancy, when this spitting came on plentifully on the second day of the pleurisy, it immediately relieved all the symptoms, so that the malady itself was cured by the fourth day. Here a vein was opened on the first day of the distemper, but there was no occasion to repeat it afterwards. This is the more remarkable, because *Hippocrates*^a absolutely pronounces a pleurisy fatal to women with child: and in another place^b even declares, in general, that all acute diseases are fatal to gravid women. However *Celsus*^c has justly restrained or limited the severity of this prognostic, by informing us only, *mulier quoque gravida acuto morbo facile consumitur*; "that women with child are easily taken off by acute diseases." However it is in the general true, that a pleurisy happening in the time of pregnancy, is always more dangerous.

But again; not only this white, or concocted spitting, but also the yellow ones, mixed with small particles of blood, are profitable to this malady. I have sometimes seen in a pleurisy, a tough or clammy spitting, tinged of a reddish colour with blood, the discharge of which has equally relieved in the beginning of this malady. *Galen*^d expounding a difficult text of *Hippocrates*, whose brevity makes it more than a little obscure, and which forbids blood-letting

^a De morbis Lib. I. Cap. II. Charter. Tom. VII. pag. 533.

^b Aphor. 30. Sect. V. Charter. Tom. IX. p. 213. ^c Lib. II. Cap. vi. p. 55.

^d Commentar. 3. in 6. Epidem. Charter. Tom. IX. pag. 472.

letting in those pleuritic patients, who have a bloody spitting, tells us, that himself was called to a patient, who believed he laboured under an hæmoptoë, or bloody-flux, from the lungs, when it was in reality only a spitting of sanguineous matter from the pleuritic side (πτύσας αἱματώδες ἀπὸ πλευρᾶς): now although the habit and strength of this patient appeared such that Galen would have bled him, if he had laboured under an hæmoptoë, yet here he omitted it because it was only a gentle pleurisy; and adds that this patient was recovered by other suitable remedies, without venesection; *mitissimæ enim pleuritides sunt in quibus sanguinolentum sputitur*; “for that
 “those are the mildest pleurisies in which the spitting
 “is somewhat bloody.” From hence *Hippocrates** has pronounced those pleurisies most salutary in which yellow spittings are discharged, intermixed with a little blood; to which pleurisies he therefore gives the denomination both of sanguine and bilious, and says that they generally come to a crisis by the ninth or tenth day: but it is from their yellow colour (not their matter) that these spittings are called bilious; for in his prognostics, and in his coan prefaces, No. 390, the same spitting which he had a little before called bilious (χολώδεις) he† again calls yellow (ξανθόν). But *Duretius* in his comments to this place observes, that he has often with concern seen blood-letting ordered imprudently by physicians at this juncture of the disease, by which the spitting has been suppressed with a fatal event. *Baglivi*‡ also confirms the same thing by his own observations.

S E C T. DCCCLXXXIX.

WHEN the signs accurately observed, declare the condition of the pleurisy (§. 875.) to be like that before described (§. 888), there

* In Coacis Praenot. No. 387. Charter. Tom. VIII. pag. 873.

† In Coacas Hipp. 252. § Prag. Med. Lib. I. Cap. ix. pag. 36.

there is then no alteration to be made in the malady by the physician, but all things must be left continuing in their course: therefore no blood-letting, or other evacuation, or alteration, must be put in practice: only 1. The patient must persist in the use of a light, or soft, and thin diet; a still or calm disposition of body and mind; an air that is temperately warm and moist, and reconciled to sleep, either naturally, or by the use of the gentlest hypnotics; with such medicines as are emollient, diluent, and most gently aperient. — 2. In the next place a regard must be had to every emunctory, or discharge, serviceable to the malady; and therefore in the piles (§. 888. No. 1.) the anus is to be fomented with an emollient, relaxing, and aperient fatus; or if a discharge does not easily follow from thence, by the sucking of leeches applied to the part. If the renal evacuation (§. 888. No. 2.) be observed, fomentations of the same kind are to be immediately applied to the kidneys, hypogastrium, and perinæum; gentle aperient diuretics are to be exhibited; the air of the chamber must be kept somewhat cooler than otherwise, while sweats, or other evacuations are avoided; but balsamic and diuretic glysters are profitable: but in case of a bilious flux, (§. 888. No. 3.) the whole abdomen is to be swathed up with the like kind of emollient fomentations; laxative clysters are to be thrown into the bowels, and a relaxing diet is to be prescribed; but in an abscess, or purulent discharge, (§. 888. No. 4.) that is foreseen (§. 838.) while the part affected, is at the
same

same time pointed out, (§. 836, 840, 841.) then the treatments before directed are to be used, (§. 859, 860, 861.) and when an opening is once procured, the part is to be kept for some time from closing, by suppuratives; and again, in case of a critical pain translated, (§. 888. No. 5.) besides the common remedies, the parts into which the pain removes are to be fomented with warm emollients, liniments, gentle frictions, and stimulated by emplasters that are a little attractive. Lastly, in the salutary spitting (§. 888. No. 6.) the whole course is to be managed as in a resolvable peripneumony; and therefore every thing to be used or done in this case may be seen before at §. 850, 851.

When a physician is therefore called to a patient, in a pleurisy, his first inquiry is, whether the malady be so slight and benevolent, that one may expect it will terminate by a mild resolution, §. 887. This will appear from the levity of the symptoms, and laxity of the patients habit or constitution; for in dense or much exercised bodies such a resolution of the malady can hardly be expected; but when the pleurisy is more violent, so that there are little hopes of curing it by resolution, without a concoction, and excretion of the matter of the distemper necessary; then a careful inquiry must be made whether or no this is to be effected by the most potent assistances of art; such as copious blood-lettings, clysters, and other remedies, that are able to moderate the too great violence of the fever; (see §. 610).

The next business is to observe, whether any of the symptoms of the malady denote that nature endeavours after such an evacuation of the concocted matter, or a disposition of it upon other parts less dangerous. When either of these events appear to be

be at hand, since practical observations in all ages have taught that the pleurisy is thus quickly and safely cured; 'tis evident enough that no alteration ought to be made, but the present posture of the malady is to be upheld, which may be effected by the following means.

I.] In every disease life, and the powers of the body to be preserved, make a principal consideration; towards which the foods and drinks are highly conducive: But these do not restore immediately the substance that is wasted from the body by the actions of life, unless they are first subdued and changed by the remaining powers of the body. Since therefore the body languishes by a slight malady, whereby many of its functions are performed less readily than in health; 'tis thence readily apparent, that such things ought to be given in the diet, as being naturally in a great measure of the same disposition as our healthy humours, may be very easily subdued or assimilated into them. But upon this head we have treated largely before in the general cure of fevers §. 599, 600, 601, 602. The wise *Hippocrates*^h gave his pleuritic patients the cream of barley gruel, which in itself greatly resembles chyle, that it might both nourish and moisten the body. The like is also recommended, together with oat gruel, by *Trallian*ⁱ, who in general orders such nourishments to be given as are moistening, without being able greatly to heat or cool; therefore such a moderate temperature of the air will be necessary; the manner and the means for procuring which were mentioned before, at §. 605, No. 2, 8. But since watchfulness disorders the body when it is even firm and in health, therefore sleep is to be here rather indulged; and if it comes not naturally, may be solicited by farinaceous emulsions of the cold seeds, with almonds, &c. to which join some of the mildest anodynes, more especially

^h De victu acutor. Charter. Tom. XI. pag. 23, 160. 161.

ⁱ Lib. VI. Cap. 1.

especially those prepared from the flowers of the poppy, which are never mischievous; but the stronger opiates or narcotics are not here to be used, since they commonly suppress most of the excretions from the body. Hitherto also belong rest of body and mind, that there may be an entire tranquillity, without any disturbance, throughout the body, while nature is intent upon the concoction and excretion of the matter of the distemper: Nor is there any occasion for other remedies than such as dilute the humours, and render them fluxile, with such as dispose the vessels to relaxation, that they may more easily transmit the diluted humours, such as we before recommended at §. 887.

2.] The remedies before mentioned are suitable in every discharge or translation of the matter of the disease; but others may be also used, and are necessary when the parts are known towards which the matter of the distemper is going to be deposited.

If therefore in the fore-mentioned state of the malady (§. 888, No. 1.). Here consult what has been said upon this hæmorrhoidal discharge towards the cure of a febrile delirium, at §. 702.

If the urinary discharge be observed (§. 888. No. 2.) Concerning these salutary urines we treated at §. 853. where we considered a like critical evacuation of the matter of the distemper in a peripneumony: but since by sweats more especially, as well as by other evacuations, a large part of the diluent liquor that would form urine, is drawn away from the kidneys, therefore these are to be avoided. Hence an air, which is not hot, stands recommended, because it may conduce to avoid a sweat; for we observe, that in healthy persons there is less humidity expired through the pores of the skin in cold weather, while more passes off through the kidneys.

But in case of the bilious flux (§. 888. No. 3. &c.) We treated upon this subject also before, at §. 852, which may be here consulted.

When

When an abscess or purulent discharge, &c. (§. 888. No. 4.) Concerning all these particulars we have already treated at the numbers referred to in the text. But it must be observed, these abscesses are to be speedily opened, as they require no maturation of crude inflammatory matter into laudable pus; for here the pus, or the matter which is lodged instead of pus, being before formed in another part, gathers by a translation or deposition, whereby an abscess is suddenly formed, altho' the skin or integuments appear not affected, as we observed at §. 593. But such a part, after the abscess is opened, may be gently irritated by those topicals which the surgeons call suppuratives or digestives; whereby an immediate closing up of the opened parts will be prevented, and an opportunity will be given for the morbid humours to drain off from the blood and healthy juices; with which, as they flow thro' the vessels, with a tendency given by nature to this part, which she points out for the cure of the malady, there will be thus made a salutary discharge.

Even *Hippocrates* approves of such abscesses rendered almost fistulous, that they may keep the longer running and from healing; and the same thing, in imitation of nature we may thus endeavour for by art.

Again; in critical or translative pains, §. 888. No. 5. &c.] That is to say, when the pain of the side removes to the shoulder, arm, &c.—For trusty observation has taught us the malady is thus relieved; and therefore it is that art endeavours by diluents, attenuants, and other medicines, to dissolve the matter of the distemper, and render it fluxile; and then, at the same time, to solicit or determine the matter by gentle frictions, emollient fomentations, and aromatic plasters, such as those of labdanum, melilot, or the like, so as to excite a gentle stimulus on the parts, to facilitate and expedite the derivation of what ought, by a salutary metastasis or translation, to be here deposited from the malady. See what

has been said at §. 134, concerning derivatives, attractives, and propellents.

Finally, in the ultimate salutary discharge by a spitting (§. 888. No. 6.) &c.] All is applicable to this place which we delivered before upon the cure of a peripneumony by spitting, §. 848, which you are therefore advised to consult upon this occasion.

S E C T. DCCCXC.

BUT a pleurisy is more especially cured by art, without leaving any other distemper, under the following method of treatment: If the pleurisy above described (§. 875.) be recent, before the third day is yet over, appears great from the violence of its symptoms (§. 875, 889.) dry or without a spitting (876.) and in a person of a strong, exercised, and dry habit of body, without hopes or signs of a salutary resolution (887.) or a critical excretion (888.): Under these circumstances, 1. Without further delay a large quantity of blood is to be let, in a stream quickened by various helps, from a large vein, with an ample orifice, while the body lies supine and at rest; and while the blood flows let it be quickened by the patient's breathings, with coughings and sighings, while at the same time the affected side is fomented and gently rubbed; which process you are to continue until there is a considerable relief of the pain, or the appearances of an approaching swoon or fainting; and this discharge is to be again repeated, conformable to the urgency of the returning symptoms, for the removal of which it was first practised; or if the buff or fizy crust disappears, 'tis a warrant for intercepting any further

ther use of the lancet. 2. Immediately after venesection, are to be applied tepid fomentations, bathings, liniments, and emplasters, which may be of service by relaxing the vessels, resolving the matter, and abating the pain, or turning it off towards a meaner part. (See §. 395, No. 3. and 398, No. 6.) 3. At the same time, inwardly, are to be given such remedies as dilute, resolve, relax, moderate, cool, and ease, or quiet the pain; which being drank warm and fluid in large quantities, and determined in their operations towards the part affected, may afford good help; and these are to be varied in their qualities and exhibitions conformable to the change of appearances, always observing to chuse out such as are the most averse to putrefaction. 4. It will be necessary to order a thin or light, emollient, and cooling diet, such as is opposite to inflammation. 5. Lastly, by avoiding every thing that is drying, heating, or stimulating a more violent circulation; such as great heat of the air, sun, fire, bed, diet, or medicines.

We have now seen in the foregoing aphorisms, how a pleurisy may be cured, by the help of nature chiefly, with little or no assistances from art; for all the physician had to do under those circumstances of the malady, was only to keep it in the present course of the mild resolution to which it inclined, without introducing changes of any kind. But when the pleurisy was to make its cure by the concoction, and excretion, of its morbid cause, it was incumbent on the physician to watch the parts, or outlets, to which the proper signs shewed the matter to have tendency, to see that those parts were properly relaxed and fo-

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mented, the humours inwardly well diluted, and the patient's strength upheld by a light and emollient nourishment: and these together were sufficient to answer his intentions.

But if now the pleurisy be violent, as we may know from the sharpness of the pain, the great hindrance to the breathing and intensity of the fever, there are then no hopes for such mild resolution of the malady, as we proved before at §. 386, where we treated on the cure of inflammation by a resolution. If then there are no hopes that the matter of the distemper may be soon digested and expelled; and especially if there be little or no spitting to give any relief to the distemper; 'tis then called a dry pleurisy; and we may reasonably conclude so stubborn a malady will not at all end in health of its own accord; and this more particularly if the distemper be in a strong and exercised person, as *Hippocrates* assures us^k, when he says, *Corpora exercitata ac densa citius a pleuriticis & peripneumonicis morbis pereunt, quam non exercitata.* “Persons exercised, and of a dense or
“strong habit, sooner perish by pleuritic and perip-
“neumonic diseases, than those who are not exer-
“cised.” The reason of which observation we gave before, at §. 386.

Here then we must have diligent recourse to the assistances of art, that the pleurisy may be cured without generating another distemper. It appeared evident from what we advanced at §. 875, that there is a true inflammation in such a pleurisy; and, therefore, all the events of inflammation, either suppuration, gangrene, or schirrhus, may here take place. The way which ends by a suppuration, although it be not always very dangerous in a phlegmon of the external parts of the body, is however much to be feared in a pleurisy, because the abscess that follows after the malady very frequently pours out its collected matter into the cavity of the breast, by
which

* Coac. Praenot. 398. Charter. Tom. VIII. pag. 875.

which a fatal empyema is often produced. We are, therefore, to use all the assistances of art, in order to prevent the inflammation we call a pleurisy from ending in an abscess.

Now it appeared (§. 396.) when we treated on the cure of inflammation, by resolution, that the principal remedy to answer that intention is, to diminish the quantity and impulse of the circulating humours, from urging upon the inflamed parts, and chiefly by blood-letting. And this is the more necessary as the acute pain impeding the respiration, does often in the worse kind of pleurisy suffocate the patient, before the inflammation can be able to make a suppuration: but we observed upon another occasion (§. 141.) that *Galen* recommends a very plentiful blood-letting in the most ardent fevers, violent inflammations, and the severest pains; and that even in such he recommends blood to be drawn until the patient faints away. The most urgent reasons do therefore apparently call out for blood-lettings in a pleurisy.

Nor have I ever once observed venesection to be mischievous, even in those pleurisies where, after an abatement of the malady, there has followed a concoction, and excretion, of the matter of the distemper, through the various outlets before enumerated §. 888. We there indeed gave an admonition to abstain from blood-letting when those excretions appeared to be at hand, but not otherwise. On this occasion you may peruse the histories of pleuritic patients that are given in the very learned *Triller's* dissertation upon this malady, which we before recommended; for by that it will appear all those salutary discharges ensued when the violence of the dangerous malady had been first abated by repeated blood-lettings: and this is a truth I have seen confirmed also by my own particular observations, made in the course of my practice: for in a violent pleurisy, although by a happy treatment the matter of the distemper may be dissolved, and rendered fluxile; it hardly ever

once happens that this matter can be again assimilated with the healthy juices, so as to circulate with them freely, and without prejudice to the vascular system, which this matter almost constantly stimulates to such a degree as obliges them to throw the same off by one out-let or another, in a sensible discharge from the body. This caution was here necessary to be given, lest any one should fear to order blood-letting in the beginning of a pleurisy, thinking it might hinder the said salutary endeavours of nature to expel that matter.

Now although the antient physicians were timorous of venesection for this malady in infants, old people, and women with child; yet in our days we are taught by unerring observations, that even in these the lancet may be very safely used, provided the quantity of blood drawn be proportionable to the age, strength and circumstances of the patient, as we before observed, at §. 610.

Nor have I neglected to open a vein even while the menstrual flux has been upon the patient, if her breathing appeared much hindered; and have seen the good effects of it follow also in child-bed women, seized with a pleurisy; although they had the lochial-flux, blood-letting has been of considerable use; which is a truth confirmed also by the observations of *Le Motte*¹, who has even ordered repeated blood-letting from the arm, when that flux has not been small.

Now although it be certain, that when this malady is to be cured by art, without leaving another distemper after it, blood-letting is the best performed as early as possible; yet even when the malady is further advanced, the lancet will be of use to the adult pleurisy, if it has been neglected in the first attack. *Celsus*^m has indeed observed the advantages of it in treating of a pleurisy, where he says, *Remedium*

vero

¹ Traité des Accouchemens Liv. II. Chap. xxi. pag. 224.
^m Lib. IV. Cap. vi. pag. 209.

vero est magni recentisque doloris sanguis missus. At, siue levior, siue vetustior casus est, vel supervacuum, vel serum, id auxilium est. “ Blood-letting is indeed “ the cure if the pain be recent and severe; but if “ the case is more slight, or of long standing, this help “ will either come too late, or be without any man- “ ner of use.” And in another place, treating of blood-letting from the veins, he ⁿ adds, *Sed ut aliquando etiam primo die sanguinem mittere necesse est, sic nunquam utile post diem quartum est, cum jam spatio ipso materia vel exhausta est, vel corpus corrumpit; ut detractio imbecillum id facere possit, non possit integrum.*

“ But as it is sometimes necessary to let blood even “ on the first day of the malady, so it is never use- “ ful after the fourth day, in which space the matter “ of the complaint is either exhausted or resolved, “ or else has suppurated the body itself; whence the “ blood-letting may indeed weaken the malady, but “ cannot entirely remove it.” And it is very cer- tain, that if a violent inflammation has continued for four days, we have just reason to fear it is beginning a suppuration; but then with respect to a pleurisy, we have before seen that blood-lettings from a vein are advantageously used much later than this. A notable instance of this occurs in *Hippocrates* ^o, in the case of *Anaxion*, who lay ill of a dry pleurisy, to which hot fomentations had been applied without success; he was wakeful, and turned delirious on the sixth day of the disease; but the seventh day was very troublesome, for the fever increased, and the pains not at all abated; on the eighth day a large quantity of blood was taken by opening the vein of the cubit or fore-arm, whereby the patient was relieved in his pain; and after several critical discharges, the malady was carried quite off by the thirty-fourth day. But *Galen* ^p in his comment upon this place observes to us, that *Hippocrates* particularly mentions this case

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by

ⁿ Lib. II. Cap. x. pag. 80. ^o Epidem. 3. ægrot. 8. Charter. Tom. IX. pag. 302. ^p Ibidem.

by way of admonition, because the physicians of that time laid it down as a kind of rule, never to bleed from a vein after the fourth day. *Triller* ^a has in this case very successfully trod the steps of *Hippocrates*, in the cure of a very dangerous pleurisy, attended with the worst symptoms; in which, with very considerable relief, he drew about a pound of blood, from a vein of the arm, upon the eighth day of the malady; and even in the morning of the ninth day, when there appeared some danger of a suffocation ensuing, he again took six or seven ounces of blood more from the foot; and by these expedients he in a manner snatched this patient from betwixt the jaws of death.

Hippocrates indeed seems, by the last mentioned case of *Anaxion*, to have first endeavoured to procure an abatement of the pain by emollient and warm fomentations, before he had any recourse to blood-letting; and in another place ^r he even assures us that a pain of the side either in its beginning, or of longer standing, may be reasonably attacked by warm fomentations, in order to disperse or resolve the cause. The same is also recommended by *Alexander Trallian* ^s; but he advises us to have immediate recourse to depletion, if the pain does not yield to the foment, or if it be rather increased thereby. In the beginning of a slight pleurisy, without any violent fever, and much hindrance to the breathing, this is a remedy that may be seasonably tried, because at that time we may reasonably hope for a mild resolution of the malady (§. 887.), or at least for a happy and speedy cure of it by a concoction and excretion now attending; but where the pleurisy is dry and violent, one ought to be mindful of the very good caution given by *Aretæus* ^t, in the head of the chapter where he treats of the cure of this malady: *nulla moræ occasio in pleuriticis neque cunctationis, sed valida medicatione opus est.*

^a De Pleuritide ægrot. 7. pag. 99. ^r De victu acutor. Charter. Tom. XI. pag. 36. ^s Lib. VI. Cap. 1. pag. 268. ^t De curatione morbor. acutor. Lib. I. Cap. x. pag. 89.

est. “No circumstance can plead for delays, and
“trifling practices in the cure of pleuritic patients;
“but powerful remedies are necessary.” Therefore
he is for having a vein opened on the same day with
the malady, unless it arises from over-eating or drink-
ing, in which case he prefers one day’s abstinence, as
a preparative.

Let blood therefore as soon as possible, and that in
a quantity sufficiently large; yet not neglecting to re-
gard the diversity of age and strength in different
patients; it is here of considerable benefit for the
blood to flow in a quick stream, from an ample ori-
fice in a large vein; for which reason ’tis better to
bleed in the arm than in the hand or cubit: for here
the blood-letting is not only intended to lessen the
quantity, but to cause a sudden depletion of the ob-
structed arteries, while the arterial blood urges less
upon them, whereby contracting they may repel
back the obstructing particles to their larger trunks
(for which consult §. 141. No. 1.) and thus remove
the inflammation. To forward this intention also,
the painful side is to be gently rubbed and fomented
while the blood continues flowing from the vein;
but when so large and sudden a blood-letting is re-
quired, it will be best to bleed the patient lying supine
in the bed, whereby he will be better enabled to bear
the discharge without fainting, than if he was to sit in
an erect posture.

Sometimes it happens in a pleurisy, that for the
violence of the pain, the breast can by no means be
dilated or moved; whence the lungs transmit but
very little blood, for which reason the large veins
are very full or turgid; but the aorta receiving but
little blood, does not press forward that of the veins
with any great force, so that upon opening a vein
there is often but little blood flows out; but so soon
as the patient makes a greater expansion of his lungs
by sighing, or shocks them by coughing, the blood
comes

comes out impetuously. This *Tulpius* ^u remarked in a pleuritic woman, and makes it an admonition to physicians, that in such cases they may excite the patient to cough: but as these patients have often the pain so severe, that the least dilatation of the breast throws them into convulsions, and in such it will be in vain for the physician to persuade a cough, or a stronger breathing: it will be then best in such a case to give them a pinch of some sternutatory, or a spoonful of sower wine, or hot vinegar to drink under the name of a cordial, whereby an involuntary cough may be excited, which may suddenly remove the pain, or at least greatly abate it.

The quantity of blood to be drawn is various, according to the difference of age and strength in the patient, as may easily appear. *Sydenham* ^w usually ordered adults to be bled to about twelve ounces at a time; although a larger quantity may be often very safely taken, more especially at the first venesection. 'Tis best for the physician to be present, and to determine the quantity as present circumstances shall direct. For the generality it is usual to continue the discharge until the patient can either breathe more freely, or feels a considerable abatement of the pain: or, if in the worst kind of pleurisy the pain does not abate (as rarely happens, unless the operation has been too long neglected in the malady) we suffer the evacuation to go on as far as prudence will permit, until the signs of a fainting approach; such as a sinking of the pulse, a sweat in little drops upon the forehead, with a paleness of the face, eyes, and lips; on perceiving which, the vein is to be directly closed. *Aretæus* ^x here particularly cautions to avoid a fainting, lest a peripneumony should follow: for that, while the heart stops in a fainting, the blood in the right sinus, auricle, and ventricle, often stagnates for some minutes,

^u Observat. medicar. Lib. II. Cap. III. ^w Sect. VI. Cap. II. pag. 335.
^x De curatione morbor. acutor. Lib. I. Cap. x. pag. 90.

nutes, and the blood being in this inflammatory malady greatly inclined to inspissation and concretion, upon which it will in some degree enter before the patient can be raised from his fainting, it may thence hesitate and become impervious to the smaller vessels of the lungs through which it ought to pass, and by that means cause a peripneumony, which is a malady much more dangerous than a pleurisy itself.

But it frequently happens that the pleuritic pain, abated by the first blood-letting, at length returns again with equal severity; and then the blood-letting is to be repeated, and this as often as the urgency of the pain, and the hindrance of the respiration shall call for a speedy and certain relief. Accordingly *Sydenham*^y has observed to us, that a confirmed pleurisy, in adults, is rarely cured with discharges of blood of less than forty ounces; although in children, the opening of a vein once or twice will be sufficient; even sometimes the malady is so stubborn as to require a loss of blood greatly exceeding forty ounces, taken frequently, or by repeated venesections. Great numbers of observations made by the best practical physicians bear witness to this truth. In a child-bed woman, seized with a violent pleurisy, or pain of the side, on the eighth day after her delivery, *Tulpius*^z found it necessary to open a vein thrice in the foot, and five times in the arm, before he could conquer the stubborn malady; yet the patient escaped out of all the dangers, altho' she had to support an excessive flux or purging, besides the repeated bleedings. A case almost of the same kind is also given us by *Le Motte*^a.

Sydenham^b placed the sole cure of a pleurisy in repeated blood-letting, whenever the symptoms continued or returned; and assures us that he never observed any mischief ensue from those blood-lettings, which

^y Sect. VI. Cap. 11. pag. 336.

^z Observat. medic. Lib II.

Cap. 11. ^a Traité des accouchemens Liv. II. Cap. xx1. pag. 224.

^b Sect. VI. Cap. 11. pag. 338.

which to the unskilful seemed too copious. This applause of the lancet encouraged some to persist still in repeated venesections, if there remained the least of the former pains, until they had quite exhausted their patients, who therefore never recovered, or at least fell afterwards into some languishing, chronical distemper, more especially a dropfy; but they understood not the intention of *Sydenham* rightly; for his advice expressly is, to repeat the blood-letting^c, *ubi dolor atque alia symptomata admodum saeviunt*: “when the pain and other symptoms become very “severe.” For although some pain, and a slight fever may yet remain, if the breathing be not thereby very considerably hindered, nor any dangerous event threatned (see §. 609.), tis best to weaken the powers no further by this evacuation, as they are required to digest or throw off what yet remains of the malady.

In most inflammatory diseases, and especially in a pleurisy, when the blood drawn from a vein has parted the serum from its cake of red cruor; on the upper part of the last is observed a white or livid crust or skin, exceeding tough, and sometimes several lines in thickness, difficultly cut thro’ even by a rasor, (concerning which you may consult what has been said at §. 384.) and so long as this crust or skin appears upon the cake of the evacuated blood, so long blood-letting is allowed by physicians to be useful in this malady: but it is an admonition given us by *Sydenham*, (which we mentioned at §. 384.) that the formation of this skin in the blood of pleuritic patients is frequently hindered, if the stream does not flow briskly, and freely, from the opened vein, but runs slowly, trickling over the skin of the arm; in which case this sign becomes fallacious. But the celebrated *Triller*^d assures us, that he has found this whitish pleuritic crust upon the blood, when it has dropped very slowly from the vein, in a perpendicular

^c Ibidem 336.^d De Pleuritide pag. 27, 28.

lar direction. I remember myself also to have seen the like, as well in pleuritic patients, as in those who, being well, bled only to preserve present health. But there are more certain signs to determine the utility of further blood-letting, or the disuse of it, to be had from the severity or abatement of the pain, in consideration with the patient's strength, and the urgency of the other symptoms: even when the patient is extremely weak, if all the symptoms are notwithstanding grown again to a considerable degree of violence, there is no other help remains but to repeat the blood-letting. There is a remarkable case given us by *Trillere*^e, that shews how successful the courageous efforts of a physician may often be in circumstances seemingly to be despaired of. In a robust youth addicted to hunting, under a most severe pleurisy, after two large blood-lettings, the disease seemed to change for the better; but on the fifth day all the symptoms of the malady returned with great violence, so that in spite of clysters and vesicatories, the patient seemed to be at the point of expiring. A large orifice was made in the veins of both feet, now grown so cold that though they were fomented with water not a drop of blood came; upon which water so hot was continued to be poured upon them as fetched off the cuticle, and then the veins bled plentifully enough, and to so good purpose that the half-dead patient revived, and was afterwards happily cured of his malady.

Helmont^f indeed madly cries out in this point, that by the lancet the physician makes a bloody sacrifice of the patient to *Moloch*, and therefore absolutely condemns blood-letting altogether in this malady. His imaginary hostile acid, which he calls a thorn fix'd in the pleura and intercostal spaces, he says may be extracted or obtunded without spilling the vital blood; and this miracle he thinks himself
able

^e De Pleuritide, pag. 68.
inferibitur *Pleura furens*, pag. 217, &c.

^f Videatur capitulum, quod

able to perform by a little powder of stag or bull's pisse, juice of wild succory, wild-popy-flowers, and other trifles; but more especially his most noble antipleuritic remedy was dry'd goat's blood, catched by tying feet and horns of the animal together, and after cutting off the testicles, to collect the blood until the animal was exhausted; this dried and reduced with great labour to a fine powder, made his noble antipleuritic medicine. However he seems to have himself confided in what he so industriously recommended to others, for in the same chapter he describes his own case, by which it appears that his pleurisy was not resolved by these medicines, but rather ended in a dangerous suppuration. It also appears from the preface which his son *Franciscus Mercurius van Helmont* prefixed to the works of his parent, that he had been twice diseased with a pleurisy; and that towards the close of his life he had such bad lungs as to be out of breath, on writing a short letter, or speaking sentences of any length. However he has unluckily had many followers in his bad notions, to the misfortune of themselves and others; and even at this day specifical antipleuritic medicines of the same kind are boastingly sold abroad, and which, as they make no disturbance in the body, may be indulged to the patient, provided other more efficacious means are not neglected by them.

It is no objection to this method of cure in pleurifies, that there are sometimes cases where blood-letting has not been found profitable, although the symptoms of a pleurisy attended. For thus in the *Edinburgh Essays* §, it is recorded, that in the month of *February* of the year 1736, a bad sort of pleurifies were popular in that metropolitan city of *Scotland*, in which it was found that blood-letting did more harm than good. But if we consider the symptoms which are there recounted, it will appear that epidemical malady was different from a true pleurisy; for a bilious

§ Med. Essays, Tom. V. part. 1. pag. 32, 33.

lious vomiting attended from the beginning, and a pricking pain about the lowest ribs only succeeded after the two first days, with a difficulty of breathing, and a slight cough; the pulse too was neither full nor frequent, and the blood let out appeared brownish, yellowish, or greenish, and hardly coagulated.

Nor was *Sydenham* any stranger to seeming pleurifies of that kind, as he was so well skilled in detecting the various constitutions or natures of epidemical maladies. We observed before, §. 880, in speaking of a symptomatical pleurisy, that this incomparable physician admonished us, that often epidemical fevers, by some sudden and evident change in the qualities of the air, would make a copious deposition of the morbid matter upon the lungs or pleura, altho' the fever itself continued to keep its primitive disposition; therefore he expressly advises^h, "But if the fever (such as is epidemical) refuses to be relieved by repeated blood-letting, neither will that discharge be of service (even it will be prejudicial) in a pleurisy, which rises or falls with the fever itself." There is also a memorable text of *Hippocrates*ⁱ which confirms this admonition, for he says, *Dolores circa latus in febris, tenuiter consistentes, absque signis, laedit venae sectio, & si cibum aversetur, & hypochondrium elevatum sit.* "That pains of the side that are moderate in fevers, without the eminent signs, are hurt by blood-letting; more especially if there be an aversion to food, and a swelling of the hypochondrium or liver." *Duretus*^k indeed reads this text otherwise, making (*ἀπυρετοῖσιν* for *ἐν πυρετοῖσιν*) it *without fevers*, instead of *in fevers*; but this change of the text that excellent expositor seems to have made from fancy only, since he alledges no manuscript or copy for such a reading. Now this passage beautifully concords with the observations made

^h Sect. V. Cap. v. p. 310.
 Charter. Tom. VIII. pag. 880.

ⁱ Coac Praenot. No. 491.

^k In Coac. pag. 387.

made by modern physicians upon symptomatical pleurifies; for in such the pain is not so very violent; whence *Hippocrates* names it (*ισχνός*) thin or small. And he adds, that those pains are (*ἀσθηα*) without the other signs that attend a true pleurisy. Now in that symptomatical pleurisy which was observed in *Scotland*, there was a sickness at the stomach attended, which got considerable relief from a gentle vomit. In short, we not only often observe difficult cases of practice remarked by *Hippocrates* in his coan presages, but we also there frequently find advices that are very salutary towards their cure.

It was formerly a very warm controversy among physicians, whether in a pleurisy the vein ought to be opened in the arm of the affected, or of the opposite side: both opinions were backed by many authorities; *Hippocrates*, *Galen*, *Celsus*, and others, seem to declare for the arm of the affected side, while *Aretæus*, *Aetius*, and *Caelius Aurelianus*, advise venesection to be practised in the opposite side. From the eighth down to the sixteenth age, and lower, for the space of above eight hundred years, it was almost the universal practice of physicians, in a pleurisy, to bleed in the arm opposite to the painful side; but after the works of *Galen* and *Hippocrates* began to be revived in the dawn of the sixteenth age, and to gain the preference over the *Arabian* writers, because the then lately discovered art of printing rendered those medical treasures more easily procurable to all the studious, the face of medicine began to change, by the comparison which learned professors made betwixt the notions of the *Arabians* and the more established maxims of *Hippocrates* and *Galen*; to which if they did not appear conformable, they were rejected. *Peter Brissot*, created doctor of medicine by the university of *Paris* in the year 1514, began there publickly to expound some of the books of *Galen*, and to explode those of the *Arabians*. He finding that the general method
of

of bleeding in the arm of the affected side was recommended by *Galen*, took upon him to oppose the practice, and to change it for the contrary side; which luckily succeeding in an epidemic pleurisy that spread in *France*, at the beginning of the sixteenth age, brought over many eminent physicians to follow him. The practice was soon after carried into *Portugal*, and there put to the trial, but with great opposition from the first physician of his *Portuguese* majesty, till at length the affair was debated in the university of *Salamanca*, and a decree issued, that no physician should presume to bleed directly in the arm of the affected side; but the decree was afterwards mitigated. Even importunate solicitations had almost moved *Charles* the Vth, emperor and king of *Spain*, to proscribe, by public authority, this innovation of *Brissot's*. Upon these matters there is an extraordinary tract, which deserves to be read, by *Renatus Moreau*¹, in which the opinions of principal authors, that have been given upon this matter, are ranked in chronological order, together with doctor *Brissot's* life.

After this it seems to have been left indifferently to the choice of every one, either to follow the practice of *Hippocrates* and *Galen*, or that of the *Arabians* last mentioned; and when the circulation was once known, most were of opinion it mattered not from which arm the blood was drawn, provided it was taken in a sufficient quantity, from a large orifice, and in the beginning of the disease. However, the matter has been of late again disputed betwixt two eminent physicians of the present age at *Paris*, *Sylva* and *Chevalier*. But since, to determine in controversies of this kind, a careful observation of the good or bad events that follow in the cure of diseases, is of great moment, it would thence seem that the opinion is safest which adviseth bleeding from the

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arm

¹ De Missione sanguinis in Pleuritide. Paris 1630. & Halae 1742.

arm of the affected side. *Brissot's* success thereby, in the cure of an epidemic pleurisy^m, while most of those who bled in the opposite arm either died, or languished long under their malady, was a confirmation to his opinion. *Sydenham*ⁿ bled his pleuritic patients, as soon as he was called to them, from the arm of the affected side; but when he afterwards repeated his venesections, he makes no mention of the part from whence the blood was drawn. *Hildanus*^o confesses that he seldom or never observed the desired success from bleeding the opposite side to the pleurisy. The same opinion is also of late confirmed by the observations of the learned *Triller*^p, particularly as to the first blood-letting; for the second he rather chuses to have performed in the foot of the same side; and then in the other foot of the opposite side, if there should be occasion for using the lancet a third or a fourth time; but he justly advises that the first blood-letting may be of all the most copious. But this whole affair is very well confirmed by a remarkable instance, wherein veins were opened in different parts, in two youths who led the same course of life, and were seized with a pleurisy at the same point of time, and from the same causes^q. He that was bled in the arm of the affected side, altho' he lay badly delirious, soon came to his senses, and had no further need of bleeding; but the other, who had a larger quantity of blood taken from the foot of the affected side, had no relief by it; whence it was necessary to open a vein again on the day following, which was done in the arm of the affected side, by which all the symptoms were immediately abated, and the patient afterwards recovered from a dangerous pleurisy by a happy crisis, only two days later than the former.

We

^m De Missione sanguinis in Pleuritide, pag. 120. ⁿ Sect. VI. Cap. 111 pag. 335. ^o Observat. Chirurg. Cent. V. Observ. 30. pag. 410. ^p De Pleuritide, pag. 30. ^q Ibid. pag. 80.

We observed a little before, that sometimes epidemical diseases spread themselves which had some of the appearances of a pleurisy, altho' they were not true or genuine, but symptomatical pleurisies only, which received no benefit from blood-letting, or at least seldom ever suffered a second bleeding without manifest damage; and yet that this is no reason for condemning venesection in a true pleurisy. Now all this may be certainly said of the malignant and contagious pleurisy which is mentioned in an epistle from *Gesner*^r to *Crato*; for he remarks, that in this particular kind of pleurisy, bleeding from the arm never was successful, but that blood was here happily enough taken from the foot. 'Tis also observable that, in the same epistle, *Gesner* owns himself not yet acquainted with the method proper for treating this pleurisy; and in another^s, wrote three months after the former, he confesses he had made very few remarks in the cure of this distemper, because he had been called to but few patients, and the disease itself went off in the spring season.

2.] The most antient method of treating pleurisies for a cure, seems to have consisted in the application of external remedies to the painful side; for before physic was reduced to the form of a profession, every man endeavoured to relieve himself from pains by various trials, or applied something that his neighbours had found useful in a like complaint^t. But nothing seems more readily or easily applicable, than such external remedies; and therefore accordingly meet with the most antient accounts of such in use. Thus in a marble table found in the temple of *Æsculapius* at Rome, in the little island of the Tiber, among other matters we read a Greek inscription concerning one *Lucius*^u, who being despaired of in a pleurisy by all persons, the god *Æsculapius*

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^r *Gesner. Epist. pag. 19, 20.*
Prolegomena Institut. Boerhaav.
Lib. I. Cap. 1. pag. 3.

^s *Ibidem, p. 21.*

^t *Vid.*

^u *Mercur. de arte gymnast.*

culapius gave him an oracle, to take ashes from the altar, mix them with wine, and apply them to the painful side: by which he is there said to have been cured, rendering afterwards public thanks to that deity. 'Tis well known by ancient history, that the crafty priest, in order to give a greater reputation to their temples and idols, prescribed remedies to the credulous people, as if they came revealed from an oracle or deity of the temple.

This seems probably the reason why *Hippocrates*^w, who collected those ancient records for his own use, began the cure of pains in the side, by the application of warm foment, even before he proceeded to any blood-letting: for he applied to the painful side hot water in a bladder, or some other vessel, or else a sponge dipped in hot water: and even more sharp medicines, that had a great power of dissolving, he used for the same purpose; namely little bags full of bran, barley, or vetch-meal, moistened with the strongest vinegar, and applied hot. 'Tis also evident from the history of *Anaxion*, cited from *Hippocrates* just before this aphorism, that he in vain attempted the cure of a dry pleurisy by warm foment; and therefore he prudently advises^x, *verum si fomentis dolor non solvatur, non multo tempore califacito; illud enim pulmones exsiccat, ac suppurationem facit.* “ But if the pain goes not off by foment, continue “ not long to use hot applications; for the heat dries “ up the lungs, and causes a suppuration.” This advice he gives when a more violent sort of pleurisy could not be resolved by these foment only.

Trallian^y also attempts the cure of a pleurisy by foment, and hot bags, applied to the side; but if the pain increased, he without further delay proceeded to evacuation. But the method of *Aretæus*, is still much safer, being that which all skilful physicians now

^w De victu acutor. Charter. Tom. XI. pag. 36. &c. * Ibidem pag. 41. ^y Lib. VI. Cap. 1. pag. 268.

now practice; namely, he orders ² to begin the cure by opening a vein without any delay; and then he applies the external remedies aforesaid. How far those remedies are useful, in resolving an inflammation, was declared before, at §, 398. No. 3. where we treated upon the cure of inflammation. Now as it was shewn at §. 386, that one might reasonably expect the cure of an inflammation by resolution, if the circulating humours were mild, and the vessels pervious or moveable; tis thence easily apparent, that these applications ought all of them to be warm, moist, and endowed with a power of relaxing: there are various forms of such medicines in our author's materia medica, corresponding to the number of this aphorism. I have myself frequently used a solution of Venice soap, in equal parts of warm water, and new milk; or I have dissolved the soap in an emollient decoction, half an ounce to each pound of the liquor; flannels being soaked in this solution, and laid upon the side, hot tiles were placed over them, to keep the foment from growing cold: but in the night time, that the frequent renewal of the foment might not be troublesome, I have ordered the side to be first anointed with *ung. dialthææ*, and then to be covered with a melilot plaster.

But these external applications of the most emollient remedies, are not only of use to the happy resolving of the inflammation, but likewise when the malady comes too late to be so treated, or when the more malignant disposition of it inclines to a suppuration; the intercostal spaces are then so relaxed by these applications, that one may hope for a solicitation of the matter outwardly, so as to hinder a dangerous empyema.

3] Concerning these alterants we treated before in the general cure of inflammations, as also in the cure of a peripneumony, at §. 854, No 3. A simple decoction of barley with oxymel and nitre, is often

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sufficient

² De cura morbor. acutor. Lib. I. Cap. x. pag. 89, 90.

sufficient here, since this includes all the qualities necessary towards a cure; for it dilutes by being watery, relaxes and eases by the mealy substance of the barley that is intermixed with the water, while the honey and vinegar very well dissolve inflammatory size or spissitude, as does likewise the nitre, which at the same time abates the too great heat of acute diseases, by lessening the density of the humours (see §. 692.) In the materia medica, at the present number, are given other forms for the same purpose. Nor will it be prejudicial with these to intermix some of the milder anodynes or paretics, more especially if there is great restlessness, and troublesome watchings; the wild poppy flowers, and all officinal medicines thence prepared, may be here safely used, and with so good an effect, that many physicians have from thence been induced to believe the poppy flowers a specific anti-pleuritic medicine, by which alone this malady might be cured. The syrup of white poppy heads, prepared by boiling in water, has been likewise of service, after blood-letting and other suitable remedies have gone before. But the stronger narcotics which stupify the sense of pain, while the destructive causes continue acting, appear not so safe. This method of using anodynes is also recommended in a pleurisy by *Trallian*^a.

The preceding medicines are to be taken to a great quantity in the whole, but in small doses at a time, as three or four ounces of the barley drink or decoction may be taken warm every half hour; for the drinking of any liquor cold is hurtful to pleuritic patients, as *Aretæus* hath justly reminded^b. Moreover *Baglivi*^c assures us, that the drinking such a ptisan extremely hot, was a secret or favourite medicine with him in a pleurisy, as well as in other maladies of the breast which required resolvents; and
adds,

^a Lib. VI. Cap. i. pag. 271. ^b De curat. morbor. acut.
Lib. I. Cap. x. pag. 93. ^c Prax. med. Lib. I. Cap. ix. pag. 35.

adds, that he has seen his patients, almost livid with the degree of suffocation, quickly freed from their oppression, by frequent draughts of pectoral decoction, supped almost scalding hot.

But to determine the said medicines towards the affected side, those fomentations, warm bathings, &c. applied to the seat of the pain, as were lately recommended, will be very conducive; for we proved at §. 134, that all those things, which by relaxing the vessels, lessen the resistance to the juices impelled to any part of the body, do direct or determine the efficacy of medicines inwardly taken towards the same part.

We before admonished, under the present aphorism, that the violence of this malady might be indeed abated by blood-letting, with other medicines; but that a violent pleurisy could seldom or never be cured without a discharge of the matter of the disease first concocted or digested, or else translated to some other part. The various causes and modes of the cure of pleurisies by such concoction and excretion of the morbid cause or matter, were before described §. 888. and it appeared from §. 889, that a different method of cure was then required, according as the matter of the distemper endeavoured to go off by one emunctory or the other; therefore it is justly added in the text, that the things taken are to be varied according to the changes of the symptoms.

But such of these are always to be chosen as are averse to putrefaction.] For in a pleurisy there is an acute continual fever, § 875, by which all the humours are inclined to corruption, as we demonstrated before in the history of fevers. Almost all the medicines which the ancient physicians used for this malady, were either acid or naturally inclined to turn acid. Barley, ptisan, vinegar, honey, and mead diluted, have been recommended by them, which still continue to be used, with good success in this malady, by physicians of the present day, while they

justly reject the volatile salts that were so much applauded by *Sylvius*; as also from things alkaline or opposite to acidity, which *Helmont* makes the cause of a pleurisy, namely, alkaline salts to correct, or absorbents to obtund; which, if they do no harm, are at least of no use to the cure of the pleurisy.

4.] In every fever to be cured, the life and powers of the patient are to be regarded by suitable drinks and fluid nourishments, as we shewed before at §. 599, & *seq.* in the general cure of fevers: But since a pleurisy seldom is entirely terminated before the seventh day, but often runs to a much longer extent, 'tis therefore evident enough, that the vital powers are to be here sustained by suitable nourishments. But among these, such are the most convenient as are the most easily digested or changed by the patient, and by a body weakened with profuse evacuations. *Hippocrates*^d gave only barley drink in acute diseases, more especially in a pleurisy; for he dared not to trust the patient with the whole ptisan or gruel, without straining off the barley, so long as the pleurisy continued crude or without signs of concoction, and even then he only allowed the thin or dilute part of the gruel. Afterwards, when the patient seemed to be out of danger, and the disease abating^e, he then gave them a small quantity of the thin cream of barley ptisan mixed with honey. Again, when the expectoration became easy, and the breathing free, without any pain left in the side, he then gave a larger proportion, and of a thicker cream, from barley gruel, twice in the day. *Aretæus*^f likewise greatly extols the gruel and cream of barley in a pleurisy, and will allow the patient no stronger nourishment, unless when the malady runs out to a considerable length of time, and so thin a nourishment appears insufficient to sustain the patient's strength. Conformable to the same practice, *Sydenham*

^d De victu acutor. Charter. Tom. XI. p. 23—29. ^e Ibidem p. 169. ^f De curat. morbor. acutor. Lib. I. Cap. x. p. 90.

ham^s always prohibited flesh, and flesh-broths, however small, in pleurifies, and allowed only barley or oat-gruels, and panada; and after all the symptoms were grown moderate or inconsiderable, he still interdicted his patients for many days after from the use of all spirituous drinks, and grosser aliments^h.

5.] We have seen a pleurisy is an inflammatory malady, with an acute fever; and therefore every thing that will dissipate the watery parts of the blood, increase its density and febrile motion or heat, are here highly prejudicial. Hence the unskilful were used to commit great errors in this malady, when pleurifies being frequent in severe seasons, they have administered the most heating medicines, and imagined they should be able to cure the distemper by causing them to force out a sweat. *Sydenham*ⁱ observes, that other fevers change into a pleurisy when they are treated in the beginning with medicines that are too heating, and laments that ladies of quality were so conceitedly more forward to furnish the poor with medicines to cure them, rather than bestow their charities in food and necessaries. But if thus a perverse treatment can change another malady into a pleurisy, it is easily apparent that a pleurisy once formed, may, from a like cause, be rendered much worse. Thus I saw a pleurisy fatal on the second day, because an officious woman, supposing it to be a windy pain, or from flatulencies, administered repeated draughts of spirits distilled from lovage-seeds. In another strong muscular man, blood-letting and other remedies having been seasonably used, by the fifth day the malady was changed for the better, and there seemed to be hopes of a happy cure; but, by his own advice, the same evening, very hot tiles were applied to his breast, which forced a profuse sweat, which the unfortunate patient looked upon as a good sign, but the next morning he expired.

From

^s Sect. VI. Cap. III. pag. 335, 336.
ⁱ Ibidem, pag. 332.

^h Ibidem, pag. 337.

From this, and other cases of the like kind that have been met with in my practice, I have been taught the justness of *Sydenham's*^k admonition, in cautioning us from keeping pleuritic patients too much heated; for which reason he left such patients at liberty to be taken out of their bed for a few hours each day, if their strength would allow it. Even he has observed, that copious blood-letting, and other cooling medicines, would often be of no benefit if the patients were kept always confined to their bed, more especially if they were much loaded with bed-cloaths.

If then every thing that irritates, heats, and accelerates the course of the blood, are to be esteemed mischievous in a pleurisy, what are we to think of blisters prepared from cantharides? *Baglivi*^l recommends them as a capital remedy, when at any time of the disease, either before or after blood-letting, a suffocating difficulty attended in the breathing, with a suppression of the spitting; for then he immediately ordered two blisters to the legs, and assures us that by this treatment, out of an hundred patients, very few were lost, in an epidemical pleurisy that spread itself at *Rome* in the close of the last century, from a winter intensely and unusually cold.

He observed likewise, at the same time, that by this practice the diarrhæa that accompanied those dangerous pleurisies, either wholly ceased, or greatly abated. The celebrated *Triller*^m also observed, that in a wonderful case of a pleuritic woman, who was almost exhausted with a stubborn flux from the bowels, lay senseless with a rattling in her throat, and a livid swell'd visage like those who are strangled with a cord, a small trembling and intermitting pulse, the urine and stools flowing involuntarily, yet she was recovered even from the jaws of death, after two large

^k Ibidem, pag. 337. ^l Prax. Med. Lib. I. Cap. ix. pag. 37. & in Dissertatione de usu & abusu vesicant. Cap. iii. pag. 656. ^m De Pleuritide, pag. 76.

large vesicatories, prepared of the powder of cantharides, were applied to the calves of the legs: at the same time too the dangerous flux from the bowels ceased.

Now altho' it might seem at first view, from *Baglivi's* writings, that blisters may be safely applied in the beginning of a pleurisy, even before a vein has been opened, yet, from what follows in the same author, it appears that he used blood-letting before the blisters were applied; for thus he writesⁿ: "Observe
" that the foresaid pleuritic patients in which we re-
" marked these advantages from blisters, were not
" purged in the beginning of the malady, as is done
" by some practitioners, but after seasonable blood-
" lettings, only pectoral decoctions, &c. were pre-
" scribed." *Triller*^o advises the application of blisters to the legs and thighs, when after repeated blood-lettings the difficulty of breathing still remains considerable, or even increases: however, he freely confesses that the use of blisters did not always succeed as he wished.

Almost the same effects from the use of blisters in pleurisies, we read in the *Edinburgh essays*^p; for in an epidemical pleurisy that spread in the spring of the year 1732, when the symptoms seemed to require repeated blood-letting, the pulse thereby became so much depressed, that it was hardly recoverable to its former and natural strength, without blisters were immediately applied, which were very often of service, as sometimes after the use of them a sweat ensued, that carried off the epidemic malady, when it continued long and copious; otherwise the patients had to grapple with the pain, anguish, and oppression, till they sunk under them.

It appears from the experiments of *Baglivi*, made upon living animals, as well as by mixing powder of the flies with the blood, and its serum, that these
infects

ⁿ Dissertat. de usu & abusu vesicantium, Cap. III. pag. 656.

^o De Pleuritide pag. 54.

^p Medic. Essays Tom. I. pag. 42.

insects have the power of dissolving the texture of our juices; but they also dispose our humours, being once dissolved, towards a putrefaction^q.

And therefore it may seem from thence conclusive, that the use of cantharides is not at all safe, where there are signs of a violent fever, great heat, and a dangerous putrefaction. Thus *Baglivi*^r gives us the history of a patient of a thin bilious habit, who lay ill of an acute pleurisy, with a dry cough, and most ardent heat of the fever, a hard high pulse, watchings, thirst, thick and very red urines, &c. to which patient six blisters were applied on the thirteenth day of the disease; but the day following a delirium came on, a suppression of the spitting, a tremor and epileptic motions, &c. and he expired on the twentieth day.

But when the violence of the fever has been first greatly abated by the necessary blood letting, and there are no apparent signs of putrefaction in the urine and intestinal fæces, while the pain still continues, or the lungs begin to be oppressed, then blisters seem to promise we may expect much good from them. In such a case I have seen a blister applied to the painful side, and have sometimes practised the same myself with very good success.

S E C T. DCCCXCI.

WHICH remedies (§. 890) and how long they are to be continued or repeated, are taught by the obstinacy itself, or the abatement of the disease, and by its changes or crises, (§. 888.)

Two events were here principally to be feared; namely, the ending of the pleurisy, as an inflammation,

^q Dissertat. du usu & abusu vesicant. Cap. 1. pag. 648. ^r Ibidem. pag. 649.

tion, by a suppuration, which is dangerous in these parts; or else by a gangrene, which is almost always fatal; to which add a stuffing-up of the lungs with condensed blood, from the hindrance of the respiration, arising from the severity of the pain. To prevent these dangerous consequences, a copious and repeated blood letting with fomentations, and other remedies, were directed to be used: but at the same time, as we observed at the first number of the last aphorism, care must be taken not to over-weaken the patient, by blood-lettings more especially, lest the powers should be insufficient to digest and expel the matter of the distemper; from whence afterwards languishing or chronical maladies might ensue, that are very difficultly curable. Therefore, although some pain may still be left, if the breathing be tolerable free, and pulse little or nothing hard, while the circulation has not an excessive celerity; yet the malady will be subdued by the use of fomenta, with diluents and attenuants drank plentifully: for the happiness of a cure in such cases lies here, that you keep the continual fever which attends a pleurisy within so moderate a degree of violence, as will render it neither destructive, nor sluggishly insufficient. But concerning this salutary degree, and the signs by which one may distinguish it, we treated more largely in the commentaries to §. 609.

It was proved at §. 610, that cooling-clysters are to be ranked among those remedies which lessen the violence of the fever; and yet *Sydenham*^s either seldom used such clysters, or else interposed them at very long intervals betwixt the repeated blood-lettings; and then only used the more simple, such as sugar dissolved in milk; for he deservedly placed his chief confidence of a cure in blood-letting, and, therefore, seldom used clysters, that his patients might not be over weakened; as also that there might be no hazard of a flux or purging from the bowels, excited by

by the sharpness of the clysters; which flux is in the beginning always a discharge symptomatical and pernicious. When once the violence of the malady abates, then the inflammatory, or concreting matter of the distemper begins gradually to dissolve, and seeks itself a discharge by various outlets from the body: therefore to this discharge the physician ought to be attentive, lest unseasonable remedies should disturb the concoction and expulsion of the morbid matter, of which we treated at §. 888.

When once the distemper is over, great care should be taken that the recovering patient be not allowed to fill too fast with nourishment: for often in this malady the danger of death is not to be avoided but by considerable losses of blood: and we proved before, at §. 25, that a loss of the healthy indigenous humours, hindered the assimilation of the ingested nourishment into the nature of healthy vital juices; therefore it is to be feared that a sudden repletion with gross or unassimilated chyle might obstruct the lungs, and cause a dangerous return of the malady; this is what *Hippocrates*^t prudently cautions against, where he treats on a pleurisy; for he says, *post judicationes autem vires levibus cibis reficiendae, & quiescendum: praeterea vitandi soles, venti, plenitudines, acida, salsa, pingua, fumus, ventris flatus, labores, Venus: si enim reversus fuerit morbus, mors sequetur.*

“ But even after the critical excretions are ended, the
 “ strength must be supported by light aliments, with
 “ rest of body; and at the same time one must guard
 “ against the sun, winds, over-feedings, aliments
 “ sour, salted, fat, or smoked, flatulency of the
 “ bowels, laborious exercises, and venery; for if
 “ thus there be a relapse of the disease, death is the
 “ consequence.”

But when once the patient had recovered his strength, which usually happens in a short time after a pleurisy, *Sydenham* was accustomed to compleat the
 cure

^t De morbis Lib. III. Cap. xv. Charter. Tom. VII. pag. 592.

cure by gentle cathartics; for by that practice whatever remained indigested in the first passages, during the patient's recovery, or any remains of bile, and other juices, thrown into the stomach and bowels from any change of the habit by the malady, are expelled, which might otherwise be mischievous if any longer retained in the body.

As for the boasted antipleuritic specifics, such as goat's blood, raspings of stag's pisse, powdered boars teeth, or jawbone of a pikefish, wild poppy-flowers, infusion of stonehorse's dung, and the like; they may be granted, without danger of any mischievous consequences from them, whenever the patient, or any other physicians in consultation, have a positive confidence in them; but provided at the same time there be no neglect in the use of those more effectual remedies before advised, and by which alone the cure of this dangerous malady can be accomplished.

We have now seen how a pleurisy may end in health, under the assistance of nature, either by a mild resolution, or by a concoction, and excretion of the matter of the distemper; and besides this we have also pointed out how it may be cured by art, without leaving any other distemper after it. It now follows that we proceed to consider a pleurisy as it changes into other diseases, or as it terminates in death; and at the same time also to point out what art can effect towards the cure of such maladies as unhappily arise from a bad, or ill treated pleurisy preceding.

S E C T. DCCCXCII.

A Pleurisy ends then in other diseases, either
1. when the inflamed parts are suppurated; which we know about to happen (α) from the general signs of suppuration (at §. 387, and 402); (β) from the obstinate continuance of

of the pain, cough, and fever beyond the fourth day; (γ) from the absence of those signs which denote a resolution of the matter (§. 887.), or a critical expulsion of it (§. 888.); and lastly (δ) from a neglect of the requisite art, or treatment of the malady (§. 890.).

We now come first to treat of a pleurisy as it tends to a suppuration: but as in this case the distemper requires a different treatment from that which gave hopes of a resolution; therefore we ought to know which are the signs that inform us a suppuration is approaching.

α .] Concerning these general signs we before treated, at the numbers cited in our text, where we considered the ending of a phlegmon by suppuration or abscess.

β .] For the pain that increases at the time of inspiration, with the cough and fever, are the signs that accompany every pleurisy; and by the severity of which we judge concerning the violence of the malady. If, therefore, these signs continue obstinate, and without abatement, the inflammatory matter will be so compacted, or condensed, and so far wedged into the narrower ends of the arteries which are the seat of the distemper, as will render it impossible to go off without a suppuration: but then we must remark, that a suppuration is then only a certain or undoubted consequence, when these signs hold on in the same degree during the whole time of the malady, or are even rather increased than diminished: for it often happens in a pleurisy under cure, that all the symptoms abate by blood-letting and other remedies, and then, after a while, or on the next day, they return to their former, or a greater vehemency; and this they shall sometimes repeat to three or four returns successively, so as to be still remaining with all the signs of a violent pleurisy, after the fourth day,

day, or later in the distemper; but we are not from hence to believe that in such circumstances the pleurisy is undoubtedly ending in a suppuration; because the pain is still perceived very sharp, even after the fourth day. All practical physicians are acquainted with this truth; and the histories of pleuritic patients, that are given us in a professed treatise on the malady, by the celebrated Triller, which we have before repeatedly commended, give evident demonstrations of the same fact.

γ.] For when these signs are absent, we are sure that the inflammatory matter continues still impacted in the vessels, whence a suppuration is to be feared: therefore Hippocrates^u treating on an empyema; *fiunt autem & superiore ventre purulenti, ex pleuritide, si vehemens fuerit, neque diebus principibus (judicatoriis) computruerit, neque per sputum rejectu fuerit.*

“ But patients also become purulent (or get an empyema) in the upper venter or thorax, after a pleurisy, when that proves violent, and neither discharges itself by a spitting, nor by an abscess, on any of the principal days that are critical.” And in another place^w he lays down this general rule in practice, (which we mentioned before at §. 833. No. 3.) *quicumque vero dolores ex his locis neque per sputorum expurgationes, neque per alvi dejectionem, neque per venae sectiones, & dietam, & medicamenta, sedantur eos suppurationem facturos esse sciendum est.*

“ But whoever has pains in these parts, which cease without any discharges by spittings, purgings from the bowels, or blood-lettings with suitable diet and medicines; we are to know that those pains are about forming a suppuration.” But we are to observe that sometimes in stubborn pleurisies the malady runs on to a great length; and yet the parts inflamed do not form an abscess, although there

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are

^u De morbis Lib. I. Cap. vii. Charter. Tom. VII. pag. 538.
^w In Prognosticis. Charter. Tom. VIII. pag. 645, & in Coacis No. 394. ibidem pag. 874.

are neither signs of a resolution, nor of critical excretions. Such cases I have seen in my practice and the like is also evident in the history of *Anaxion* which *Hippocrates* * gives us: for this patient, he observes had no spitting on the first days; but he became delirious on the sixth day, and had his fever more violent on the seventh day; nor was there any abatement of the pains, but the cough and difficulty of breathing still continued to molest the patient. The pain indeed, and the danger of suffocation, were here diminished, by a large blood-letting, on the eighth day of the distemper; but a dry cough still remained, and there appeared no discharge of morbid matter.

But yet even later than this, the matter of the distemper made its escape from the body, at several times, and by divers outlets, 'till the patient was at length critically recovered, without any suppuration; which yet was to be feared, in the first part of the distemper. Therefore it is hence evident, that an absolute prognosis of an approaching suppuration cannot be immediately had, even though in the course of the malady there be no apparent signs of resolution, nor any marks of a concoction and excretion of the material cause; which yet sometimes make their appearance later in the malady, and perfectly recover the patient.

δ.] Namely, a neglect of blood-letting, which so necessary in a violent pleurisy; and which being timely used, and repeated according to the urgency of symptoms, succeeds happily enough. Those who following *Helmont's* doctrine, have endeavoured to subdue this malady by antipleuritic specifics, have sometimes rejoiced to find the fever, that before raged (in the inflammatory, and beginning of the suppuratory stages) suddenly abate, or even cease when the matter is once formed; but then they have afterwards found an empyema, succeeded with an hectic fever.

* Lib. III. Epidem. aegrot. 8. Charter. Tom. IX. pag. 302

Sect. 893. Of a PLEURISY. 99
fever and a consumption; of which numbers have
perished, who believed they should be cured with-
out blood-letting, by those boasted specifics. *Syden-*
ham y has also admonished us of this deceitful way of
terminating a pleurisy.

S E C T. DCCCXCIII.

BUT that a suppuration is now forming we
know from the common signs (§. 405.)
but more especially here from an horror or
chuddering often returning without an apparent
cause; also from the signs before given in a
peripneumony (§. 834, 835.); and from the
same springs it is also discovered when once com-
pleted, and sometimes it is even evacuated by
spitting from the lungs.

An abscess here formed has indeed all the same
signs in common with other suppurations, that are
made in the external parts of the body, upon which
we treated at §. 405; but most of these signs can-
not here be perceived, as the abscess lies concealed
within the body; therefore it is a matter of import-
ance to collect here all the other signs which may
help to point out a suppuration herein formed.
Those unsettled shiverings which return at no certain
periods of time, afford a sign of great moment, of
which we spoke at §. 834, where there are also many
other particulars relating to this subject, and at §.
835. Here likewise the time of the malady running
out to a great extent, but with less violence of the
symptoms than at the beginning, is a material con-
sideration; for if all the symptoms remain equally
violent, or even increase, then a gangrene or death
are rather to be expected than a mild suppuration;
which last, although here extremely dangerous, is yet
much

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much better than those worse kinds of terminating a pleurisy by a gangrene, or by death. Thus *Hippocrates*² in treating on a pleurisy has the following passage, *at quibus statim expuitiones cujusvis sunt generis, & dolores admodum acuti, illi tertio die moriuntur; quem si effugerint, convalescunt: qui vero septimo aut nono die, aut undecimo die sanus non fuerit, suppurari incipit. Præstat autem suppurari, minus enim lethale est, quamvis laboriosum sit.* “ But those
 “ who have immediately a spitting of any kind in a
 “ pleurisy, and the pains continue exceeding sharp,
 “ these commonly expire on the third day, which
 “ if they get over, they afterwards recover; but
 “ those who are not cured by the seventh, ninth, or
 “ eleventh day, begin to have a suppuration: how-
 “ ever it is better for them to have a suppuration
 “ than worse; for although it be very tedious, or
 “ difficult to cure, ’tis yet not fatal.” This text of *Hippocrates*² deserves to be compared with another that is very much like it, unless that for spittings wholly purulent (*πυρρὸι*) in the beginning, we had better read spittings of any kind (*παντοδαπαί*). But then in the same coan prognostic ’tis added, that they expire on the third, or on the fifth day of the disease; but if they get over those days, then if they do not find themselves sufficiently relieved of the malady, they begin to have a suppuration formed by the seventh, ninth, or eleventh day. From whence it appears that *Hippocrates* expected a suppuration when the pleurisy was not of the worst condition; or if it was very violent in its beginning, and by that time got very little abatement, having first observed on the principal days critical, whether nature made any efforts, by which he might hope for an evacuation of the matter of the disease first concocted, or else a translocation of it to other parts; where he observed neither of these, he laid it down as a rule that a suppuration was begun.

Moreover

² De Morbis Lib. III. Cap. xv. Charter. Tom. VII. pag. 591.

² Coacar. Praenot. 379. Charter. Tom. VIII. pag. 873.

Moreover the celebrated *Morton*^b, and *Baglivi*^c, have observed, that when an inflammation of the pleura, or tubercles of the lungs, have turned into an abscess, thereupon the fever that was first continual began to form one intermitting, commonly a quotidian, or sometimes a tertian. Even something of the same kind we read in *Hippocrates*^d, who says, *febres intermittentes ob suppurationem pleraeque sudorificae sunt*. “Fevers that are intermitting from a
“suppuration generally become sweating-fevers.” And here we are to observe, that *Hippocrates* in the foregoing, and in the next following maxims of the coan presages, treats especially of a pleurisy and peripneumony, and of those sweats, particularly nocturnal, to which these patients are inclined, who are afflicted with internal suppurations.

From these symptoms therefore we know that an abscess is forming; and if the same symptoms continue a long time, we are thence assured that the abscess or suppuration is compleated. But then there are other concomitant signs to confirm this diagnosis, such as arise from the distraction or compressure of the parts adjacent by the purulent tumour; for 'tis well known that an abscess once mature, and turgid with pus by suppuration in external parts, increases the pain by a distention of the skin; and even sometimes those pains are propagated from the adjacent parts that are stretched unto others that are more remote: but such an abscess, formed after a pleurisy, by removing the pleura from the intercostal spaces, distracts or stretches it with great pain, which sometimes spreads itself through the whole breast or back; the same will also press upon and irritate the lungs, so as often to occasion a most troublesome cough, or even endanger a suffocation, the more as the bag of purulent matter is larger or fuller. All these

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symp-

^b Phthisiologiae, Lib. II. Cap. iv. pag. 44. ^c Prax. Med. Lib. I. Cap. ix. pag. 36. ^d Coac. Praenot. No. 419. Character. Tom. VII. pag. 876.

symptoms are recounted by Hippocrates^e in divers places, *Ad latus dolore ac suffocatione accedente, bi suppurantur.* “A pain of the side, with suffocation of the breathing, denotes an abscess.” And in another place he has the following^f, *Quum tuberculum lateri oboritur, tussis dura detinet & dolor, & febris, & pondus in latus incumbit, & dolor acutus eundem locum semper occupat, & sitis vehemens, & calidum potum eructat, & decubitus in latus affectum non sustinet, sed in sanum. Verum ubi decumbit, velut saxum ipsi suspensum videtur: intumescit, ac rubet, pedesque tument.* “When a purulent tumour is formed in the side, the patient is troubled with a dry cough, a pain and a fever, a weight or heaviness oppresses that side, and a sharp or shooting pain always resides in the same place; the patient has intense thirst, and eructates or rejects warm drinks, and cannot bear to lie upon the side affected, but only upon the opposite or sound side. But when they lie down, the purulent tumour gives them a heavy sensation, as if it was even a suspended stone: the habit also becomes bloated or swelled, the countenance flushed, and the legs swell.” And again in another place he tells us^g, *Si in latere tuberculum oriatur, & purulentus fiat (aeger), haec patitur: rigor detinet & febris & tussis sicca per multos dies, & latus dolet, & dolor in mammam, & claviculam & scapulas impetum faciens obsidet.* “If an abscess arises in the side, so that the patient becomes empyemic or purulent, he suffers the symptoms following; a rigor or shivering invades, and a dry cough with a fever hold for many days; the side is painful, and the pain shooting from thence afflicts the breast, with the parts about the clavicle and scapula.”

But

^e Ibid. No. 115. pag. 858. ^f De morbis Lib. II. Cap. xxiv. Charter. Tom. VII. pag. 575. ^g De Internis affectionibus, Cap. x. Charter. Tom. VII. pag. 644.

But sometimes the matter here formed is evacuated, by spittings from the lungs, with an happy issue. We before treated more at large concerning the passages by which purulent matter, seated under the pleura or intercostal spaces, might find a way into, and be spit out from the lungs, §. 888. And as the lungs are most frequently found growing to the pleura in those who have once suffered a violent pleurisy, under such circumstances one may more easily apprehend how matter can pass from an abscess of the pleura into the cohering lungs. In the body of a man, whose malady I knew not, being sold to me clandestinely for anatomical uses by one of the carriers, I found the left lung firmly cohering with the pleura, through a very large compass; and when I freed this cohesion by the knife, in order to take out the lungs, a great quantity of matter flowed out; and yet it appeared, by examination, that the lungs were here not suppurated, but only cohered firmly with a purulent cyst or bag formed by a suppuration in a pleurisy. Certainly if this man had survived any considerable time longer, it seems probable that the matter would have made itself a way into, and through the contiguous lungs which so firmly cohered. But which ever way the matter may get into the lungs, after a suppurated pleurisy, undoubted observations assure us it is sometimes thus evacuated through the lungs by a spitting; and I believe there is no physician in any considerable practice, but has seen the like, which hath frequently fallen under my own observation. There is a remarkable case in *le Motte*^h, of a pleuritic patient who, having neglected his malady, discharged from his lungs a very large quantity of matter by a moderate cough upon the eighth day, and with an happy issue. Even *Hippocrates*ⁱ manifestly declares the same, when he says of a pleurisy, *Judicatur autem hic morbus, brevissimus*
H 4 *quidem*

^h Traité complet de chirurgie Tom. I. pag. 248.
affection. Cap. 111. Charter. Tom. VII. pag. 621.

ⁱ De

quidem septimo die, longissimus autem decimo quarto die: quo quidem si pus a latere per sputum rejeetum fuerit & repurgatum, sanus evadit. Si vero non per sputum rejeetum fuerit, purulentus fit, & morbus longus. “ But
 “ the critical termination of this malady is, for the
 “ shortest time, within the seventh day, but at longest
 “ within the fourteenth day; by which times, if the
 “ matter be spit up from the lungs, and cleared
 “ from the abscess, the patient recovers. But if the
 “ matter be not thus evacuated by a spitting, the
 “ patient becomes empyematic or consumptive,
 “ which is a chronical or lingering malady.” A
 prognostic of the same kind *Hippocrates* ^k also gives
 us in his aphorisms, *Pleuritici, qui intra quatuordecim
 dies superne non repurgantur, illis in empyema transit.*
 “ Pleuritic persons, who are not cleared of the ma-
 “ lady by (the mouth or) a spitting, have it turn to
 “ an empyema.” For *Galen* in his commentaries to
 that aphorism, proves that the word (*ανακαθάρσιναι*)
cleared upward, signifies that cleansing which is made
 by a spitting.

S E C T. DCCCXCIV.

BUT such an abscess, broke open by its
 own proper matter, therefore allows the
 said matter to drain into the cavity of the breast,
 and new matter being formed and collected by
 the ulcer, at length fills the whole capacity,
 and makes a consumption of the whole body:
 that such an ulcer is formed, we know from
 the preceding signs (§. 892, 893.); and from
 the continuance of the malady even to the four-
 teenth day; from the sudden abatement of the
 symptoms, and the speediness of their return:
 and hence comes a true phthisis or pulmonary
 consumption.

* Aphor. 8. Sect. V. Charter. Tom. IX. p. 199.

An abscess thus formed and turgid with collected matter, breaks into an ulcer sooner or later, if it be not timely evacuated from the body by other outlets, which yet rarely happens but through the lungs, of which we are here directly to treat. But yet *Aretæus*¹ indeed seems to have been of opinion, that sometimes the matter of an abscess formed after a pleurisy, might be evacuated from the intestines, so as to leave the patient afterwards recovered: but he also, in another place^m, mentions a discharge of the matter in like circumstances, both by the stools and by the urine; but he commends the transflux of matter through the kidneys and bladder, as the better of the two. Upon another occasion, in the comment to §. 406, we observed, that *Galen* and others have observed vomica's, or bags of matter in the breast, to have discharged themselves by stool and urine. It was formerly usual to oppose the authority of *Hippocrates* against that of *Aretæus*, as the first pronounces; *Pulmonem suppuratis per alvum pus secedere, lethale est.* “A flux or purging of matter from
 “the bowels of those who have suppurated lungs,
 “to be a fatal sign.” But here *Hippocrates* has no regard to a pleurisy; and with respect to a pulmonary consumption, those purgings are always of the most dangerous import; even the suppuration itself that ensues after a pleurisy, is principally dangerous on account of the usual injury it offers to the lungs in contact. Moreover, it appears from all practical observations, that in suppurations of the internal parts that have been long sustained, when a purulent or putrid diarrhæa arises, it usually takes off the patient. But *Aretæus* does not here speak of such a flux or purging from the bowels, as arising from the colliquation and corruption of the fluids by the absorbed or returned matter; but of a more sincere
 flux

¹ Morbor. acut. Lib. I. Cap. x. pag. 9.
 signis morbor. diuturnor. Lib. I. Cap. ix. p. 38.
 Praenot. No. 431. Charter. Tom. VIII. p. 877.

^m De causis &
ⁿ Coac.

flux of matter by stool, before it has continued any long time confined in the vomica of the breast: for his words are (ἢ ἐς ἐντέρον ἐκραγῇ) if it rushes through the intestine. But the word ἐκρηγνυσθαι denotes a sudden, violent, or precipitate eruption, or transflux.

Unless therefore the matter here collected shall escape by those outlets, or perhaps be deposited by a translocation upon other parts (as rarely happens) the abscess then breaking, generally pours out its matter into the capacity of the breast, and there creates more or less mischief, in proportion to the quantity that occupies the breast and lungs. But the abscess thus broke and turned ulcerous, will pour out daily more new matter, by which means there is often a very great quantity of corrupt matter lodged in this venter. Such a quantity once surpris'd our celebrated *Boerhaave* in a country lad, who had been afflicted with a pleurisy in the harvest time, from the sudden drinking of cold liquors to excess, after he had been much heated by the sun and labour. By neglecting the distemper, as they often do in the country, it ended in a suppuration, and in a month after the patient expired by a suffocation. Upon opening the abdomen, the diaphragm appeared thrust downward on the affected side, so as to form a large bag that projected beyond the navel, and had thrust most of the abdominal viscera out of their situations. Upon making a perforation through this bag, there flowed out above twelve pounds of matter. *Aretæus* ° of old having remarked cases of the same kind, confesses that he much wondered how so great a quantity of matter could flow from so thin a membrane as the pleura, which had scarce any substance or thickness; but he assigns for a reason, that this membrane grows thicker by inflammation. But if now we consider that the matter falling into the cavity of the breast becomes more acrid by standing, and

° De causis & signis morbor. diuturnor. Lib. I. Cap. ix. pag. 37, 38.

and perpetually lies upon the surface of the ulcer, we may thence easily perceive, that so long as there is no outlet to the matter, the ulcerated part can never be reduced to the state of a clean wound, and so cannot be healed; therefore it continues to pour out a purulent matter, and in a considerable quantity, since the adjacent heart strongly fills the intercostal arteries, and the surface of the ulcer is continually fretted by the confined matter in the breast, with the agitation of the lungs in breathing.

But we know such an abscess has broke and poured out its matter into the capacity of the breast, if those signs have preceded which denote an abscess to be formed, of which we treated a little before. But such a vomica, or bag of matter, while it remains entire and distended with pus, fills part of the capacity of the breast, and compresses the lungs; and therefore occasions almost all the same symptoms which were enumerated before at §. 835. Moreover, it is to be remarked, that the pains of the inflamed part abate while matter is formed; but when afterwards the abscess filled with matter becomes more distended, and the membranes including the matter are by degrees more enlarged, there follows at length a most troublesome pain, which is so much the more severe, as the purulent vomica is nearer upon the point of bursting. This has sometimes deceived less skilful physicians, who ascribing the said sharp pain to a new inflammation, have sometimes exhausted the patient's strength by repeated blood-lettings, when they were already near spent by the lingering disease itself. But when once such an abscess has broke and poured out its matter into the capacity of the breast, the pain ceases suddenly, and the anguish or oppression that ensued from the compressure it made upon the lungs greatly diminishes, insomuch that the unhappy patient, sensible of such sudden relief, often vainly imagines that a perfect cure is made: but when the quantity of the matter collected

collected in the breast is more augmented, the oppression, cough, and almost all the other symptoms return, and convince the patient his hopes were in vain.

Hippocrates ^p has very handsomely summed up the diagnostic signs which usually go before, and attend, upon such a formed suppuration, and a bursting vomica or abscess; and also remarks that the time of this rupture is uncertain, being sometimes sooner sometimes later; but these are his words, *suppuratos maxime ex pleuritide & peripneumonia calores comitantur, interdiu tenues, noctu vehementiores, & nihil memoratu dignum spuunt, circa collum & claviculam sudant, & oculi cavi fiunt, maxillae vero rubent. Pejus autem, digiti extremi calescent & asperantur, ungues curvantur ac perfrigerantur, & circa pedes tumores habent, & per corpus pustulas, & abstinent a cibis. Diuturni igitur tumores (suppurati) haec signa habent. Quae vero brevi rumpuntur, significantur ex illis, quae superaccidunt, & ex doloribus in principio: simul etiam si aliquanto difficilius spiraverit homo. Rumpuntur autem plurimae suppurationes, quaedam vigesimo die, quaedam quadragesimo, quaedam sexagesimo. Quibus igitur dolor in principio incumbit intentus, & spirandi difficultas & tussis cum sputatione, ad vigesimum diem aut citius ruptionem expectata; quibus autem leviora haec sunt, secundum rationem. Supputare autem oportet tempus, a quo primum doluit, aut gravatus fuit, aut febricitavit, aut si quando rigor corripuit. Necesse est autem praecedere dolorem, & spirandi difficultatem, & sputationem ante ruptionem.* “ Those who
 “ after a pleurisy, or peripneumony, become suppu-
 “ rate, or empyematic, are troubled with flushings
 “ or heats, slight in the day time, but more violent
 “ in the night; they spit nothing considerable, are
 “ apt to have sweats about the neck and breast,
 “ and their eyes appear hollow or sunk, but their
 “ cheeks look red or flushed. As the malady grows
 “ worse,

“ worfe, the ends of the fingers often turn rough
 “ and hot, the nails grow crooked and chilled, the
 “ legs or ancles swell, pustules break out about the
 “ body, and they have an aversion to food. Long
 “ continued vomica’s, or suppurated tumours, have
 “ therefore the abovementioned signs, but those
 “ which break in a short time are denoted by the
 “ signs which come afterwards, and from the pains
 “ in their beginning or formation, and likewise from
 “ the oppression or difficulty of breathing in the pa-
 “ tient. But most of these suppurations break, some
 “ on the twentieth day, others on the fortieth, and
 “ others on the sixtieth. In such therefore as have
 “ the pain in the beginning of the abscess more ur-
 “ gent, and the breathing more difficult with a
 “ cough and spitting, you may expect it will break
 “ by the twentieth day, or sooner; but in such as
 “ have these symptoms more slight, you may ex-
 “ pect it will be longer breaking in proportion; but
 “ then you ought to begin the computation of your
 “ time from the first painfulness of the abscess, or
 “ the oppression; or from the time that the slight
 “ fever, or the shivering was perceived. But there
 “ must of necessity be some pain, difficulty of breath-
 “ ing, and spitting, perceived before the break-
 “ ing.”

But that a pulmonary consumption or phthisis, gra-
 dually wasting the whole habit of the body, may arise
 from the matter collected in the capacity of the thorax,
 no one doubts.

S E C T. DCCCXCV.

THerefore, when we are acquainted by
 the signs (§. 892, 893.) that the part
 inflamed forms an abscess, the place that was
 before painful being marked is to be opened, or
 eat through with a caustic to about the depth
 of

of the pleura, that must be opened by incision; the opening once made must be kept so, by suppurative dressings, that the matter pressed outward by the expansion of the lungs may avoid the pleura, and prevent an empyema; afterwards, until the cleansing be sufficiently compleated, it must be treated with emollients.

Since the principal danger of a suppurated pleurisy lies in the falling of the matter so frequently into the cavity of the breast, by a rupture of the abscess; therefore, when the signs teach us that such a suppuration is already formed, an attempt deserves to be made to procure a discharge for the matter by the external parts. To this purpose conduce fomentations, cataplasms, emplasters, &c. which are applied to the painful side, even in the beginning of the disease, as was said before (at §. 890. No. 2.); for these, by mollifying the exterior parts, procure a more easy derivation of the matter thither: but as those emollients are seldom alone sufficient, therefore the wise ancients intermixed more acrid or stimulating substances with them, that by irritating the outward parts, the latent malady might be solicited that way. Thus *Aretæus*^a in the cure of a pleurisy says, *si morbus productior sit, & dolor pertinax & humida sit expurgatio, purulentum hominem fore speratur; tunc sinapi & cackrys (semina) cataplasmatibus admiscenda sunt.* “If the disease be farther advanced, the pain
“ stubborn, and a phlegmatic spitting attends, there
“ is room to hope the patient will have a suppura-
“ tion; and then mustard seeds, and cummin seeds,
“ are to be mixed with the cataplasms.” But after these applications he recommends the fixing a large cupping glass, after the seventh day, with a great flame to the painful side, or affected part, and then to scarify the same; he then orders the incisions

^a De curatione morbor. acutor. Lib. I. Cap. 10. pag. 91.

ons of the scarificator to be rubbed with salt or nitre, and the day following to apply another cupping-glass.

Now it is well known that parts of the body placed under a cupping glass, swell immediately from the lessened pressure of the atmosphere upon that part; by which means the most powerful derivation is made towards the integuments upon which cupping glasses are fixed; also the irritation of the little wounds by salt or nitre answer the same purpose.

Moreover when we are certain that an abscess is formed, it will be proper to divide the incumbent parts down as far as the pleura, either by the caustic or scalpel, and then by the use of digestive, or suppurative dressings, to keep the parts open for a considerable time, with a view that the matter meeting here but little resistance, may pass from within outward. Hence it may be worth while to mark the place that is most painful in the beginning of a pleurisy, by affixing a small emplaster; because here the abscess usually rises or points, when the malady neither inclines to be cured by a resolution, nor a concoction and excretion; so that by this mark one may afterwards better apply a caustic, or make an incision upon the known part. This is indeed a rare practice amongst our modern physicians, and few patients are ready to admit the precaution; but in the mean time it well deserves to be tried, in order to avoid so dangerous a consequence as an empyema: it even appears that *Hippocrates* used this precaution in the present malady; for in treating on an abscess, or vomica of the lungs^r, he advises what ought to be done in order to break the vomica and expectorate the confined matter; and then says, *quod si non eruperit (quibusdam enim procedente tempore ad latus abscedit, & intumescit) illum oportet, ubi hoc contigerit, secare aut urere.* “ But if the matter does not ex-
“ pectorate,

^r De Morbis Lib. II. cap. 22. Charter. Töm. VII. p. 574.

“ pectorate, or come up, since by length of time in
 “ some patients it makes an abscess, and tumour of
 “ the side; when this happens the swelling ought
 “ to be opened by incision or caustic.” And a little after treating on the cure of an abscess in the side^s, he prescribes the same method; and yet he there seems to have made his incision in the painful or pleuritic side, while the inflammatory redness and pain were still there; for in that case we are yet more certain, that the confined matter may tend outwardly. But since a happy cure can only be expected in this malady, while the matter is yet laudable or inoffensive, because these patients usually miscarry when once the matter has by rest and stagnation begun to putrefy; therefore *Hippocrates*^t gives this admonition; *qui suppurati uruntur aut secantur, si pus purum & album effluat, evadunt, si vero subcruentum, & coenosum, & graveolens, pereunt.* “ If suppu-
 “ rated or empyematic patients, who are treated
 “ by incision, or by caustic, have the matter that
 “ flows out pure and white, they recover; but if
 “ they have it filthy, bloody, and ill smelling, they
 “ are lost.” But *Galen*^u remarks in his comment upon this aphorism, that *Hippocrates* more especially calls those empyematic, or suppurated, who had a collection of matter betwixt their breast and lungs, and who were usually cauterised for it by the antients, as he proves out of an antient comic writer. Hence it seems very probable that both cautery and incision, were sometimes used by the antients, when they were assured of a present suppuration, although no apparent tumor and redness was perceived in the outer parts of the breast; more especially as from thence no mischief was to be feared, and there was a probability of their doing great good.

But that considerable benefit may be expected, as to the evacuation of the purulent matter, that is more deeply

^s Ibid. cap. 24 p. 575. ^t Aphor. 44. Sect. 7. Charter. Tom. IX. p. 315. ^u Ibid. pag. 316.

deeply seated, by keeping such artificial outlets open for a considerable time, by digestive or suppurative dressings, we are taught by the following case. After a neglected pleurisy a swelling formed itself under the left scapula, where it remained two years without causing any great uneasiness, but afterwards the swelling received an injury by some violence, from which it began to be painful, and to be attended with a violent cough that was troublesome both by day and night; the patient had a spitting, of an ill smelling, yellow and thin matter, mixed with a little blood; the pulse was quick, hard and joined with great heat, the body extenuated, and the appetite lost. A prudent physician judging this tumor could not be opened without danger, chose rather to follow the steps of the ancients, who made issues by cauterising the intercostal spaces for internal suppurations; he procured a seton to be made betwixt the two ribs that lay next the bottom of the swelling, but with such precaution as not to let the needle perforate the tumor itself: a very large quantity of matter was drained off by this seton; all the symptoms were relieved, the patient's strength returned, the tumor subsided, and he got happily cured of so considerable a malady, even in a short space of time^w.

A great number of observations have been recorded by physicians, which inform us, that matter, collected in the intercostal spaces, has made itself passages to escape outwardly, after very surprizing manners. I shall only relate one instance which is singular, and fell under my own observation. A youth of twenty years old, after running beyond his strength, was seized with a pleurisy, which he neglected in its beginning; for which reason the malady ended in a suppuration, with great oppression in the breast; about the thirty-fourth day of the distemper he began to have a plentiful spitting of matter, which came up easily, and greatly relieved him; but yet

an obtuse, or heavy pain, continued in the right side of his breast, and all the ribs of the same side began to project outwards, although for thirty days running he continually expectorated great quantities of matter; to this succeeded a diarrhæa, greatly weakening, while a slight hectic fever remained, and wasted the whole body. This unhappy patient, tired out with the length of his malady, rejected all medicines; and under these dark circumstances he bore up for a considerable time; but in the tenth month, a soft tumor appeared in the middle of his sternum, about the size of a filbert-nut, and in the margin of this tumor I could plainly feel with my finger the edges of the os sterni, that was eaten through; after a few days this tumor broke of itself, and discharged a great quantity of good matter, of which the flux continued for above eight months, so that there was just reason to fear at length that the patient would sink under it. The surgeon was able to throw in a pint of a deterfive decoction, with honey, at one time by a syringe, into this hollow bag, which did not allow the liquor to penetrate into the capacity of the thorax, but seemed to run betwixt the pleura and the ribs, and then easily flowed out again by the opening in the sternum above mentioned; but the quantity of matter daily lessening in its discharge, the patient at length recovered, and I saw him eight years afterwards alive and in good strength, although the opening in his sternum still continued, and made daily some discharge of matter.

I have seen many other cases where the matter, after a suppurated pleurisy, has made itself a way through the intercostal spaces; and I have remarked that many of them survived the disaster, who promised no great hopes of a recovery from so desperate a case. Perhaps such recoveries induced *Hippocrates* to pronounce, *et quicumque ex peripneumonia vel pleuritide sunt suppurati non moriuntur sed convalescunt*

“ That

“ That they in general who have a pleurisy, or a
 “ peripneumony suppurated, are not killed thereby
 “ but recover.” Whereas all physicians observe
 with concern, that when an ulceration of the lungs
 follows from an hæmoptoë, or some other different
 kinds of a phthisis, the patients generally are killed
 thereby, while many who have very large suppura-
 tions in the breast and lungs, after inflammatory dis-
 tempers, escape; namely, when the formed matter
 can be properly evacuated, either by a spitting, or
 by some outlet, procured either by art or nature,
 before it drains into the cavity of the breast; for
 when once it has entered there, the case is much more
 imminently dangerous, as will be shewn in the apho-
 rism next following.

S E C T. DCCCXCVI.

BUT if it appears by the signs before alledged
 (§. 302, 894.), that the abscess being broke
 open, has by its matter formed an empyema;
 then the thorax (by §. 303. No. 5.) is to be im-
 mediately perforated, the matter (by §. 303, to
 No. 5.) is to be evacuated; and finally the
 wound is to be healed up by diet and medi-
 cines, §. 304.

We have already declared, (§. 894.) how the
 breaking of an abscess here formed may be known;
 and we have also treated upon the signs of an eva-
 sated fluid within the cavity of the thorax, at §. 302,
 where we considered wounds of the breast; and,
 therefore, from the conjunct appearance of those
 signs one may conclude evacuated matter to be lodged
 within the breast. Now although we here and there
 read extraordinary cases, in the writers of observa-
 tions, where matter, absorbed from the cavity of the
 breast, has been excluded by stools or urines; yet it

will be very unsafe to delay the cure from any such expectations; for unless the collected matter that lies here upon the lungs be speedily evacuated, when it is become more thin and corrosive by stagnation, and continual shaking by the breathing, it will cause a miserable consumption of the lungs; and then any attempts to discharge the matter from the breast will be fruitless, when once the lungs are wasted by the matter too long left upon them. But as for the place of the thorax, in which the opening ought to be made, and the circumstances that must be observed in the operation, we have treated of them at the numbers of the aphorisms cited in our text; and hereafter we shall have occasion to speak of the same, when we come to treat, in a professed chapter, upon an empyema amongst chronical diseases. But since there is always danger lest the thinner parts of the collected matter in the capacity of the breast, absorbed into the blood by the bibulous veins, should infect the whole mass with a purulent cacochymia, such things are to be given in the diet as are the most contrary to all putrefaction; for which see §. 599, and §. 605, No. 2. and at the same time plenty of decoctions from the roots of burdock, china, and sarsaparilla, with infusions of agrimony, betony, golden-rod, &c. are to be given, to wash out from the blood all absorbed purulency, by the outlets of sweat and urine.

S E C T. DCCCXCVII.

A Pleurisy ends also in another disease when the affected parts become schirrhous, or callous; or also by an adhesion of the lungs to the pleura; which consequences having once taken place, give birth to an asthma, dyspnæa, and dry-cough, especially after a meal, or some commotion of body: from whence such a termination

mination of the pleurisy is known, if these disorders of the breathing are present without the signs of an abscess (§. 893.) or an empyema (§. 896.); and still more if they hold long without any great increase of the malady.

Of all the particulars in this aphorism, we have treated in the commentaries to §. 843, where we considered a like ending of an inflammation in the lungs into a schirrhous and a callous tumor.

S E C T. DCCCXCVIII.

THIS last kind of malady (§. 897.) from a pleurisy being known, is either not to be remedied by any medicines, or may be removed by a harder way of living, by labour or exercise, a free air, dwelling in the country, with brisk riding on horseback often repeated.

See here what has been said at §. 862, on the cure of the like malady produced from a peripneumony.

S E C T. DCCCXCIX.

SUCH a pleuritic inflammation also terminates in a gangrene, first of the side, and afterwards of the adjacent parts with the lungs (§. 844.)

In the history of inflammation we explained how a gangrene ought to be reckoned among the events of that malady: since therefore it has been proved (§. 882.) that a pleurisy is a true inflammation, it is thence evident, that this distemper may also end in a gangrene: but since this fatal event follows only

from a pleurisy of the most violent kind, which stifles the breathing through the severity of the pain; therefore at the same time the lungs are almost constantly affected, as also because they are always contiguous to the pleura.

S E C T. DCCCC.

THIS gangrene then (§. 899) arises either from the violence of the pleurisy, or from the acrid or putrid matter likewise, that attends upon or joins it.

Concerning the causes by which an inflammation terminates in a gangrene, we treated before at §. 388.

S E C T. DCCCCI.

BUT that such a gangrene is approaching and already begun, is presaged by various appearances, such as a yellowish or purulent spitting, that is round or not ropy: purulent, and either mixed with a little blood, or of a foety-black appearance, or muddy, and foetid or ill smelling; a considerable rattling in the breast, with a grieving countenance; the eyes appearing red and yellow, and seeming dusty or cloudy; or if the spitting be from the beginning various or unsettled, they then often die on the third or fifth day. If there be a snorting or rattling without a spitting, or with one that is difficult, a languid pulse, a flame-coloured urine; if there be an humoral flux from the bowels that appears putrid, foetid, and symptomatic of the preceding malady; if a violent peripneumony supervenes, or if there be a new attack of the malady supervening the former:

If

If upon opening a vein, the blood flows out extremely florid, without any inflammatory crust (384.) even though the blood be taken in a full stream, from an ample orifice, and received into a clean vessel; if the spitting be suppressed, and the difficulty of breathing still remains, or increases with the pain and oppression of the breast, a small, quick, and hard pulse; all these symptoms, growing the worst upon the fifth day, bring death upon the seventh: if the urine be very red, obscure, with a various sediment that does not distinctly separate, it kills in fourteen days; or if the sediment be black, of a scaly or bran-like appearance, death comes sooner: if it be mild in the beginning, but increased on the fifth or sixth day, they are most in danger on the seventh and twelfth, and are seldom recovered 'till after the fourteenth day: if the back, the side, and the shoulder, appear hot and red with great anguish, while there is a very foetid and greenish flux from the bowels: all these declare for a gangrene.

It is a matter of importance to be acquainted with those signs that can teach us so dangerous a termination of a pleurisy is to be feared; and this partly, that the physician may be able to call in all the assistances of art to prevent what he has just reasons to fear; and partly, that he may guard his own reputation, by being enabled to foretel the consequence by which the patient will sink, from the violence of the distemper, without being thought himself blamable for some neglect in the cure. Therefore *Hippocrates*^y, commending a knowledge of the signs in all diseases, very justly pronounces, *Nam & eos qui ser-*

I 4

vari

^y In Prognostico Sentent. IV. Charter. Tom. VIII. p. 585.

vari possunt, multo etiam melius servare poterit, longe ante singula praemeditatus; & eos, qui tum obituri mortem, tum evasuri sint, si praeviderit, praedixeritque, omni prorsus culpa vacabit. “For that such a
 “physician will be much better able to preserve
 “those of his patients who are recoverable, having
 “long before considered all the signs and circum-
 “stances; and by the same means he will avoid all
 “blame or reflection, if he foresees and foretels
 “those who are to die, and those who are to escape
 “or recover.” But the signs in this aphorism are collected from *Hippocrates*, and point out either the vehemency of the malady, the weakness of the vital forces, or the very bad degeneration of the humours from their healthy laws or conditions, and the very difficult subjection or concoction of the material cause of the malady.

If a yellowish purulent spitting that is round or not ropy.] Why these spittings are condemned by *Hippocrates*, we explained before at §. 833, No. 3. and §. 848.

Purulent and mixed with a little blood.] Such a purulent spitting indeed denotes that the matter of the distemper is subdued; but if it be at the same time somewhat bloody, it imports also that the vessels are either eroded or broken, and for that reason is esteemed a bad sign. Moreover, when there is a gangrene in the external parts of the body, and that disk or margin appears which separates the gangrenous or corrupted, from the living parts, then this margin usually discharges such a somewhat bloody matter, which is therefore no such bad omen in the external parts, because it there denotes a separation of the dead from the living; but inwardly it always denotes great danger, namely, of a present gangrene, which is ever of dangerous consequence in the interior parts, even though a separation of what is gangrenous be already begun. And therefore here 'tis immediately subjoined, “of a sooty black, or muddy
 “appear-

“ appearance, and foetid or ill-smelling;” namely, when the dead parts begin to melt into a gangrenous tabes or corrupt matter, evacuated by a spitting, which is a discharge from the lungs, as a vital organ. But this presage is even expressed by *Hippocrates*². *Qui ex pleuriticis exspuunt purulenta, subbiliosa, rotunda, aut purulenta subcruenta, progressu temporis perniciosè habent: perniciosè quoque, qui nigra fuliginosa spuunt, aut quibus velut a vino nigro sputa fiunt.* “ Those who from pleuritic distempers have a purulent yellowish spitting, that is round or not ropy; or a spitting of matter intermixed with some blood, do in process of time fall into the most mischievous circumstances; and those are also in a pernicious case, whose spitting is of a sooty-black appearance, or who spit like the lees of dark, red or black wine.”

Here consult what has been said upon brown, muddy and filthy spittings before, at §. 848.

A great rattling in the breast, &c.] What this rattling in the breast denotes, has been declared before in the commentaries to §. 848. As to the grieving countenance, and dusty appearance of the eyes, we treated at §. 734, where we enumerated the worst signs which usually accompany a putrid continual fever. Moreover, it is to be remarked, that the tunica adnata of the eye has naturally a bluish-white colour, with hardly any blood vessels therein apparent; therefore the humours which naturally flow in the vessels of that coat, are thinner than blood and its serum. When therefore the eyes become of a yellowish-red appearance, it is a sign that the grosser juices enter into the smaller vessels of this part or pellicle, where they hesitate for want of a passage. But since anatomical injections have taught us, that the eyes receive blood vessels from a branch of the internal carotid, we know by this sign, that at the same time there must be such an arrestment or infarction

² Coac. Praenot. No. 407. Charter. Tom. VIII. p. 876.

tion of the grosser juices in the smaller vessels of the encephalon, for which reason this sign is always esteemed very dangerous in all acute diseases. But *Hippocrates*^a has more especially condemned these signs in pleuritic patients, when he says, *Quibus pleuriticis strepitus multus in pectore est, & facies tristis, & oculus ictericius ac caliginosus, hi pereunt.* “Those
 “ pleuritic patients who have much rattling in their
 “ breast, with a grieving countenance, and eyes
 “ (yellowish-red) as in a jaundice, and dim or cloudy,
 “ such are past recovery.”

If the spitting be from the beginning various or unsettled, &c.] It was said before at §. 830. No. 2, and §. 876, that *Galen* has admonished us the discharge by spittings, in pleuritic and peripneumonic disorders, have a resemblance to the sediments of urines, which denote the concoctions and crudities in diseases. If therefore the spittings are changing or various, they always denote a difficulty of the malady, and that concoction or maturation of the matter goes on very imperfectly. See the commentaries to §. 893, where we treated of this variety of the spittings, where you have also the passage of *Hippocrates*, that contains this prognosis.

If there be a snorting or rattling, without any, or with a difficult spitting.] For this is a sign the lungs are more and more filled, while in the mean time nothing enters or goes off into the wind-pipe, which being thrown out by a spitting, might greatly relieve the oppressed and stuffed-up lungs. See what was said at §. 848.

A languid pulse.] For it denotes that the powers moving the blood are weak, or that there is a deficiency in the quantity of the fluids to be moved by them: but here we are not treating of that weakness of the pulse that is sometimes observable after repeated blood-lettings, when much of the pleuritic pain has abated, and the respiration is become easier;

^a Coac. Praenot. No. 388. Charter. Tom. VIII. p. 873.

lier; but we now speak of the languid pulse which attends while the pleurisy is still violent, and which ensues from the hindrance of the respiration, so far stuffing up the lungs with gross blood, that they can transmit only a very small quantity to the left cavities of the heart, which causes a less distention of the arteries. See here what was said at §. 883, upon the same subject: therefore in this case such a languid pulse affords one of the worst omens, if at the same time there is a rattling in the breast.

A flame-coloured urine] Which being of an orange, and dilute reddish colour, seems as it were to shine or sparkle in the glass that holds it; being also a sign of the internal heat of the body that then prevails, as was said at §. 673.

If there be an humoral or liquid flux from the bowels, &c.] For such a flux of the bowels shews a great degeneration of the humours towards corruption and putrefaction, and never affords the patient any relief, as does the other flux described at §. 888. No. 3, to which this is so contrary; for that evacuated by stools the subdued matter of the distemper out of the habit; but it was before remarked, §. 388. that an acrid disposition of the juices disposeth an inflammation to turn into a gangrene.

If a violent peripneumony supervenes.] In a pleurisy the patient hardly dares to breathe for the severity of the pain, whence the hardly dilated lungs are soon filled or stuffed with gross blood, which occasions a peripneumony to succeed after a violent pleurisy; but when the pain is abated by a copious blood-letting, the breathing or inspiration is rendered easier, and the course of the blood is quickened forward, which began to be arrested in the pulmonary artery, whereby such a slight and incipient peripneumony is soon resolved; I have besides observed frequently enough, that a kind of slight peripneumony happens when the matter of a pleurisy being concocted, endeavours to make its escape by a spitting: for this reason

reason our text says, if a *violent* peripneumony supervenes, which being in itself so dangerous a malady, must be (when joined with a pleurisy) in the last degree fatal.

Hence we may understand why *Hippocrates*^b should say, *peripneumoniae ex pleuritide transmutatae* (μετασᾶσαι) *securiores sunt his, quæ ab initio fiunt*. “That a
“peripneumony from a translated pleurisy is less
“dangerous than one original, or first formed in the
“lungs.” For it seems that in this place we ought to understand those slight oppressions of the breast that happen while the dissolved matter of the pleurisy is derived into the lungs, and from them discharged by spittings, or by the other outlets, of which we treated at §. 888; for when this matter of the pleurisy, however much dissolved, or rendered fluxile, has still such qualities as render it unable to flow with the rest of the sound humours through the vessels, without causing an uneasiness; then it will be arrested for some short time in the narrow extremities of the pulmonary artery, before it can be able to pass into the pulmonary veins. And this is, perhaps, one of the causes which occasion the oppression, and uneasiness, that are observable before the critical evacuations are made, as we observed before on another occasion: but when a peripneumony, more especially a violent one, comes after a pleurisy that is still remaining, we thence understand the truth of another maxim of *Hippocrates*^c; *A pleuritide peripneumonia malum*. “That a peripneumony is of a bad kind,
“when it comes on the back of a pleurisy.” And *Galen*^d in his exposition of this aphorism, well observes to us, that it does not treat of the change of a pleurisy into a peripneumony, (like that passage of his coan præfages last cited) but that this place is to be understood to mean a second disease added to the first, namely, a peripneumony on the back of

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^b Coacar. Praenot. Vo. 397. Charter. Tom. VIII. pag. 875.
^c Aphorism. 11. Sect. VII. Charter. Tom. IX. p. 297. ^d Ibid.

a pleurisy, the latter still remaining; therefore the phrase (ἐπὶ πλευρίτιδι) *upon a pleurisy*, has here the same import with (ἐπιγινομένη πλευρίτιδι) *planted or engrafted upon a pleurisy*.

If there be a new attack of the malady supervening the first.] All who are versed in practice, know that it is generally customary in a pleurisy for the pain to abate after blood-letting, and sometimes even wholly to cease; and yet, in a few hours after, it shall often return, and require a new blood-letting: but yet a gangrene is not immediately to be presaged from such a return of the pain, as if it were a new return of the pleurisy, because many recover from the distemper, after they have suffered several such abatements and returns of the pain. But this sentence is to be understood to mean a greater degree of the malady added to a less, by a sudden increase of its violence, while the primitive pain remains little or nothing abated; or when the first pain continuing, another seizes the opposite side of the breast in like manner, as I have sometimes observed. Something like this admonition seems to be given us by *Hippocrates*^e, when he says, *Cum vero, quae ad latus impacta sunt, putruerint, & per suturem rejecta fuerint, convalescunt. Quod si & antiquum multum ad latus impactum sit, & aliud insuper accesserit (προσπεπλήσῃ) statim intereunt, &c.* “Now when the humours that
“stuff up the side of the breast are digested or made
“purulent, and have then been thrown out by a
“spitting, these pleuritic patients recover; but if
“the pleurisy be of long continuance, the matter
“obstructing the side much in quantity, and still another (pleurisy, or its cause) shall be added upon
“the back of the first, they are directly lost, &c.” But the sense in which the humours are here said to putrify, digest, or turn purulent, before they are expectorated towards the patient’s recovery, has been already explained at §. 387, in our comment upon
suppu-

^e De morbis, Lib. 1. Cap. xi. Charter. Tom. VII. p. 546.

suppuration, where we proved the term putrefy is used by the ancients to denote the maturation of inflammatory matter.

If the blood flows out very florid, &c.] This is a practical observation published to us by *Baglivi*^f, who yet confesses himself indebted for it to the celebrated *Lancisi*: But the reason of this appearance he there gives us, as he thinks the viscid parts of the blood which are most gross, sizy, or impervious, and apt to breed inflammation, are collected in the lungs, and only the thinner parts transmitted through the narrower extremities of the pulmonary artery; for he remarks that the same appearance is observable as well in a peripneumony as in a pleurisy. Perhaps the same collection may happen in those cases where a pleurisy accidentally supervenes other fevers, as from *Sydenham* we observed in §. 880; for that very attentive physician observes to us, that such pleurifies sometimes will not admit of repeated blood-letting; namely, when the nature of the distemper, in which these pleurifies happen, is itself averse to any relief from the lancet. *Baglivi*, in like manner, advises to refrain from blood-letting, at least from a repetition of it, when the blood appears to have no inflammatory or sizy crust on its surface.

If the spitting be suppressed while the dyspnœa continues.] We have before seen (§. 876.) that a dry pleurisy, in which the patient has no expectoration, is by all physicians condemned; 'tis therefore a bad sign if the spitting becomes suppressed; the spitting indeed ceases of course when the matter of the distemper has been evacuated; but then if the difficulty of breathing continues or increases, with a sense of fulness in the habit, and heaviness at the breast, it plainly demonstrates that the spitting does not cease from a want of the matter exhausted, but from the retention of it in the lungs, from whence in a short time suffocation may be feared; and this more especially

^f Præcox Med. Lib. I. Cap. ix. p. 37.

cially when a small pulse shews there is but little blood sent through the lungs to the left ventricle of the heart. But when the pulse is also at the same time both quick and hard, with intense heat of the body, there is then danger that the violent inflammation will in a very short time turn into a gangrene, in the manner we before explained at §. 388. But in such a gangrenous pleurisy, there is usually a very violent heat perceived about the vital viscera, while the extremities are scarce warm, or are even frequently cold. Moreover, *Galen* informs us, as we said at §. 883, that no pleuritic patient recovers when the pulse is both hard, small, and quick at the same time.

For these symptoms, growing the worst upon the fifth day, bring death upon the seventh.] With respect to this prognosis it is to be observed, that those maladies are called acute which run through their course swiftly and with danger; but that those are the most acute which do not surpass the fourth day, as those which hold on 'till the seventh day are called peracute; while the rest, if they exceed not the twentieth day (§ 564.) are only called acute. But this kind of pleurisy is none of the worst because a spitting attended, which is afterwards suppressed; and therefore such a pleurisy ends not within the four first days. But if this suppression of the spitting takes place upon the fifth day, and all the symptoms become then exasperated, death is afterwards the consequence upon the next critical day of the distemper, namely upon the seventh, which is the most remarkable among the critical days, as we proved more at large before, in our comment upon §. 741.

If the urine be very red, obscure, &c.] Healthy urine slowly evaporated through all the degrees of heat, turns to a high red colour, and therefore it follows that the greater part of the diluent vehicle, or water of the urine, being evaporated, the colour is more heightened; and the truth of this is experienced

rienced by healthy persons, who sweat much by the severe summer heats, whereby their urine is discharged of a much higher colour; but healthy urine left to itself, in a vessel perfectly clean, acquires by length of time a dark or obscure colour, and deposits gross fæces to the bottom^g. Besides this, the oily fat of the body being dissolved and made acrid by the febrile heat, conduces much to heighten the colour of the urine, when it escapes from the habit by these passages; whence a red urine makes a sign of great inward heat (see §. 673.) Such a urine therefore denotes an imperviousness of the humours, a dissipation of their watery parts, and a greater degree of acrimony inclining them to a putrid or corrupt state, with a violent febrile motion of them. But at §. 388, it was proved that the presence of those symptoms which this urine denotes, points out that an inflammation tends to a gangrene. But in the coan prognostic^h, wherein this whole presage is given us, the urine here mentioned is, from its intense red colour, nominated (ῥοῦν αἱμαλωδες) *blood-like urine*; and because at the same time it has some contents of an obscure or brownish colour, (which is a sign of an incipient putrefaction) it is also called (ζοφωδες) *misty or cloudy*: and as putrescent urine deposits gross fæces to the bottom, so this urine has a various, unshapen, or unequal sediment. But a black sediment denotes that there is a gangrenous disposition of the humours, as was said more at large in the commentaries to §. 741, where we treated of the presages from a black urine; such an urine therefore is still of a more dangerous import. But *Galen*ⁱ observes to us, that a greenish colour of the urine is a forerunner to one of a black colour, and therefore points out the malignity of the distemper. Yet *Hollerius*^k affirms he has seen violent pleurifies terminated

^g Videatur de his H. Boerh. Chem. Tom. II. pag. 322. ^h No. 581. Charter. Tom. VIII. pag. 886. ⁱ De Crisibus Lib. I. Cap. XII. Charter. Tom. VIII. pag. 395. ^k Jac. Holler. Comment. in Coac. Hippocrat. pag. 1047.

ted by copious, thick, and black urines. But at §. 741, it was proved that a black urine, which is also thin and small in quantity, is absolutely a fatal sign; for it then denotes that there is a corruption of the humours present, and yet that there is no discharge of the corrupted parts from the habit. But since the best sediment of urines is that which appears white, light and uniform; therefore such as is commonly called furfuraceous or mealy, being quite contrary to this, is justly condemned by *Galen*¹ as a sign of great wasting, and of burning heats, by which small parts are rubbed off from the solids of the human body, and discharged in the urine.

If it be mild in the beginning, &c.] See what has been said upon this presage in the comment to §. 883.

If the back, the side, and the shoulder, &c.] It was said before (§. 888. No. 5.) that a pain of the side serviceably removes to the shoulder, arm, or back, but then it was under a supposition that the same relieved the malady, and more especially rendered the breathing easier; but in the present case there is the greatest anguish remains, and therefore the matter of the distemper is not translated to parts where it will be less mischievous, but the primitive malady continuing, the inflammation is thus propagated or spread, and affords a very bad sign. But what a bad omen is afforded from a most foetid or ill smelling flux from the bowels, was but lately declared under the present aphorism. This prognosis is indeed read somewhat differently expressed in the text of *Hippocrates*^m; for his words are *Quum vero harum pleuritidum aliqua laboranti dorsum rubescere contigerit, & humeros incalescere, & erectum sedentem gravari, & venter exturbetur viridi & graveolenti admodum (excretionem,) hic ob ventris dejectionem primo & vigesimo die moritur, quem si effugerit, convalescit.* “ But when “ some of these pleuritic patients have a redness that VOL. IX. K “ invades

¹ Vide locum modo citatum.
xv. Charter. Tom. VII. pag 591.

^m De morbis Lib. III, Cap.

“ invades their back, a heat in their shoulders, and
 “ uneasiness at sitting up-right, while their bowels
 “ are disturbed with a green and ill-smelling flux;
 “ such are usually extinguished on the twenty-first
 “ day of the malady, by the said flux, which time
 “ if they surmount, they afterwards recover.” In
 the coan presages ⁿ there is also given a prognostic of
 the same kind, but the text seems less complete.

S E C T. DCCCCI*.

IF the pleurisy be dry from a want of strength
 in the patient, or from the severity of the
 pain, or from the unsuitness of the matter to be
 expelled; or from the over-rigidity, stricture,
 or crisping of the vessels, or from too lavish a use
 of heating medicines or aliments, the pain at
 the same time inclining to the superior parts of
 the body: if the tongue appears immediately
 dry, covered with fordes or filth, of a livid or
 blackish colour, with frothy bubbles of the same
 hue: if any or all of these signs concur together,
 the malady is generally in itself mortal, or not
 easily curable; but for the most part takes off the
 patient by a gangrene of the affected side, and of
 the adjacent lungs.

That a dry pleurisy is always worse than one moist
 was shewn before at §. 876. But a pleurisy is dry
 either from a deficiency of matter to be thrown out
 by spitting, or else for that the spitting cannot be
 expectorated from the patient's weakness, or from the
 severity of the pain; either of which denote the worst
 state of the malady. Thus in dying persons there is
 a disagreeable rattling heard in the air-vessels of the
 lungs, while the wind-pipe is indeed filled with a
 tough

ⁿ No. 380. Charter. Tom. VIII. pag. 873.

tough or glutinous humour, but the powers are now too low reduced to evacuate what is collected in the lungs. But when the spitting is hindered from being expectorated to avoid the severity of the pain, if the violence of the inflammation be not immediately reduced by suitable remedies, it will soon terminate in a gangrene.

But that the matter of the distemper may be expelled by a spitting, it is necessary either for the said obstructing or inflammatory matter to be resolved, or for the ends of the vessels to be dilated so as to transmit what there hesitates: therefore the more compact the inflammatory matter, and the more robust or contracted the vessels, so much the more difficultly will the spitting be able to come forth for relieving the malady; therefore it is that *Hippocrates* pronounces, *Densa & exercitata corpora citius a pleuriticis & peripneumonicis morbis perire, quam non exercitata.* “That dense and much exercised bodies are “sooner killed by pleuritic and peripneumonic diseases than those which are unexercised.” For in such the humours are more compact or densified, and the vessels, being more solid or firm, make a greater resistance in their dilatation; upon which we treated before in the history of inflammation at §. 386.

But since pleurifies so frequently arise from taking cold after the body has been heated by labour or exercise, it has been customary with the ignorant commonalty to treat the onset of this malady with the most heating and spirituous medicines, before they venture to call a physician; and this in order to disperse a supposed flatulency in the blood, which they imagine to arise from the taking cold, and to be the cause of this pain. But such hot medicines crisp or dry up the solids and coagulate the fluids so as greatly to increase the motion of the fever; and are therefore here in the last degree mischievous. The celebrated *Triller* relates several cases which shew with how much

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severity

severity this malady has afflicted those to whom vinous spirits or other heating medicines have been given in the beginning. I have myself observed a pleurisy fatal within thirty-six hours in a man of about thirty years old, to whom upon the first attack of the pain was administered three ounces of very strong spirituous water distilled from lovage-seeds: for altho' this unhappy man was plentifully bled within the seventh hour from the invasion, and the lancet was again repeated within a few hours after, yet he received no relief, even tho' the other most effectual remedies, both external and internal, were not neglected. For here the pain of the side continuing equally stubborn and severe, spread all over the breast as high as the throat, with a most difficult breathing and a quick small pulse; after which a delirium and death soon followed. Here it was observable that the pain spread upwards, and from the great severity thereof, the patient could never bring up any of the spitting. From this case I learned why *Hippocrates* ^P in the same presage conjoins these two signs together, namely, an absence of the spitting and a spreading of the pain upwards; for his words are, *Pleuritides siccae ac sine sputo, difficillimae. Horrendae quoque, in quibus dolores sursum (vergunt.)* “ Dry pleurisy that
 “ have no spitting are extremely difficult of cure: but
 “ those in which the pains also spread upwards, are
 “ even to be dreaded.”

If the tongue be immediately dry, &c.] Here consult what was before said of a dryness, foulness, and blackness of the tongue in an ardent fever at §. 739. But these signs plainly denote an inclination of the malady to a gangrene. But *Hippocrates* ^a also takes notice of the like livid bubbles, appearing upon the tongues of pleuritic patients, and says they are such as resemble those which arise from red-hot iron quenched

^P Coac. No. 381. Charter. Tom. VIII. p. 873. ^a Ibidem No. 384. & de morbis Lib. III. Cap. xv. Charter. Tom. VII. pag. 591.

quenched in oil; yet he derives no very fatal event from this sign, only presages from it a more tedious or difficult crisis, with a bloody spitting. However in that place he admonishes that the tongue of pleuritic patients ought to be inspected: and from another passage * of him it appears, what good grounds we have to hope for success from a moist appearance of the tongue, and internal parts of the mouth, in the like febrile diseases. For thus he expresses himself; *Quod si os humescat, et a pulmone prodeant, qualia decent, sorbitionis copiam, ut summam dicam, ad-jicere oportet: nam quae celerius magisque madescunt, celeriore crisi denunciant; quae vero tardius & minus, tardiore judicationem significant.* “ But if the parts of the mouth appear moist, and the suitable discharges are expectorated from the lungs, the necessary treatment is then in a word, to give plenty of thin suppers: for the sooner and the more all the parts are seen moistened with transfusing humidity, the more speedily do they declare for a crisis; but when their humidity appears later, or in a less degree, they denote a more backward crisis.”

Now all the signs of the above aphorism are marks of the worst conditioned pleurisy, and afford a presage so much more dangerous as a greater number of them concur together at one time, as must be obvious to every one. But since the lungs are ever contiguous with the pleura, they may be therefore easily affected, if the pleurisy ends in a gangrene. Add to this, in the worst kind of pleurisy, the lungs themselves often begin to be inflamed at the same time, from the suffocated breathing, which hinders the free transmission of the blood, expelled from the right to the left side of the heart.

* De victu acutor. Charter. Tom. XI. pag 20.

S E C T. DCCCCII.

BUT when the signs above-mentioned (§. 901*.) point out that a gangrene is about to invade these parts (§. 899.), then the most powerful remedies are immediatly, and at the same time, to be put in practice, without farther trusting to flighter remedies, or to the vital powers in the patient, provided these last are not exhausted.

For now death stands at the door, and therefore the physician must either give over his patient to the natural fate, or with an undaunted hand put the most potent remedies in force at one and the same time, after having first given to the patient's friends a suitable notice of the doubtful success.

S E C T. DCCCCIII.

THerefore in this case (§. 902.) immediately procure deep eschars or scabs to be burnt into the affected parts by the actual cautery or ignited iron; and afterwards let them be dressed with the strongest digestives or mundifiers, and be continually kept warm with the most penetrating foment; and then let the patient be plentifully supplied with draughts and drinks that are powerfully diluent, opening and counter to putrefaction: for by these means, if by any, one may be able to moderate or suppress the mischiefs of the incipient gangrene.

Since in a case of this kind, where a gangrene is at hand, or already begun, there are no hopes left
or

of a resolution or a critical evacuation; the only issue one can hope for, is, that by a formed suppuration the crude inflammatory humour may be turned into pus, and separate what is already corrupted by a gangrene from the other living parts. But when such a malady as a gangrene occupies any outward parts of the body, we see that those parts melt into a putrid or cadaverous filth, until the bounds thereof are perfectly depurated or cleared. Unless therefore all endeavours are used to procure a discharge outwards to the said gangrenous filth, it will corrupt or putrify every thing about it. For this reason deep eschars by the actual cautery are recommended, that the suppressed heat and vitality of the parts may be thereby recalled; and that when the scabs are afterwards digested off, an open way may be afforded for the gangrenous filth and ichor to escape outwardly. 'Tis true, this is an intimidating or extreme remedy; but then to extreme maladies proportionable means are to be applied, as *Hippocrates*^s hath very judiciously pronounced; who also, in another place^t very roundly commends to us burning as the last remedy, when he says, *Quae medicamenta non sanant, ferrum sanat; quae ferrum non sanat, ignis sanat; quae vero ignis non sanat, illa insanabilia ducenda sunt.* “Those maladies which yield
 “not to medicaments, are yet cured by the knife;
 “and those which yield not to the knife or instruments, are to be cured by fire or cauterisation;
 “but such as are not to be subdued by fire, are to
 “be treated as incurable.” Certain it is, that the ancient physicians attempted the cure of many diseases by the actual cautery; and sometimes they used it also to hasten the recovery from such maladies as were slowly curable without it: for thus they cauterised the breast and back for disorders of the thorax^u. But

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^s Aphor. 6. Sect. I. Charter. Tom. IX. pag. 11. ^t Aphor. 8. Sect. VIII. Ibid. p. 344. ^u Vide Hippocrat. de internis affection. Cap. ix. Charter. Tom. VII. p. 644. & de morbis Lib. II. Cap. xxi, xxii. Ibid. p. 573, 574, & pluribus in locis.

I do not remember to have read that *Hippocrates* expressly made use of this practice to relieve a gangrenous pleurisy. But the advice of *Aretæus* in the cure of a pleurisy, comes somewhat near to this practice^w; for he directs a very large and broad cupping-glass to be applied with much flame to the painful side, being cautious against pressing the glass too hard or close upon the side, that the air may have a free access, and continue the flame longer: but when the flame is out, he orders the place to be scarified, and would have the small wounds rubbed with salt or nitre to irritate them, when the patient's strength and courage will support that practice. The day following he again cupped upon the same part, as he says, *ut ex vulneribus tenuis quidam ichor extraheretur*: "to extract a kind of thin ichor from the incisions:" and then adds, (*neque enim sanguis aut alimentum, sed ichor emanat; atque id quidem facito, cum prius vires exquisite perpenderit*:) "that neither blood nor nutritious lymph, but an ichor makes up this discharge, which you are to continue discretionally, agreeable to the patient's abilities before duly considered."

But concerning the remedies both external and internal, which conduce to a cure in this case, we treated before in the chapter upon a gangrene (§. 419.). In our author's materia medica, at the present number, may be seen a form for such an antiseptic decoction as is here recommended; but the quantity of oxymel of squills seems there too large, as it may excite a vomiting; or probably it is a mistake, and we are to read *oxymellis simplicis*, instead of *oxymellis scillitici*.

S E C T. DCCCCIV.

BUT if the inflammatory cause, being extremely violent, shall have occasioned the pleuritic symptoms to take place in the highest degree,

^w De curat. morbor. acutor. Lib. I. Cap. x. pag. 92.

degree, and maintain them so, inflexible to all the helps of nature (§. 887, and 888.), and to each antipleuritic remedy (§. 890, 903.); and if these afterwards cease suddenly without any apparent cause (at least so far as they come from an inflammation), leaving the pulse continually small, quick, and intermitting; the breathing short or small, and quick, with a cold sweat; 'tis by these evident that a gangrene has now got possession of the inflamed parts. But from this fatal event a delirium soon follows, with death immediately after it; more especially when the thorax or breast appears of a livid colour, at the same time: and the consequence is also the same if the patient, who had a yellowish-coloured spitting, is suddenly eased of his pain without any apparent cause, for then a similar and fatal delirium attends, as the messenger of death from a gangrene.

The very intense symptoms that before attended now inform us the pleurisy is of a malignant disposition; but if those symptoms go off suddenly without any signs of the matter being either corrected or resolved, we are then assured that this happens because the inflammation has turned into a gangrene; for in that case we have shewn the symptoms of inflammation terminate, § 388. These are the much noted, but deceptive shews of relief, or recovery, that are often destructive to the reputation of less skilful, or less attentive physicians; for that, when the patient seems in all respects out of danger, he often expires within half an hour afterwards: but as it is usual for the very same case to happen in other inflammatory diseases of the viscera; therefore *Hippocrates* * has laid this down in a general practical axiom,

* Aphor. 27. Sect. 2. Charter. Tom. IX. pag. 69.

axiom, as follows; *non secundum rationem levantibus, non oportet credere.* “We ought not to confide in those changes which shew no reason for their relieving a malady.” For when the pain here is relieved from a good cause, the vital actions increase, the pulse feels more equal and strong, and the breathing is more free: but in the case before us, the patient breathes indeed without pain, but very quick and short, inspiring but little air at a time; also the extremities usually appear livid, the visage seems cadaverous, and the pulse is felt very weak, quick, and interrupted, all which point out fatality. Concerning these cases, therefore, it is a very handsome and general prognostic, which *Hippocrates* in another place ^y gives us, *perniciosa sine signis levantia mortem significant.* “Symptoms that are malignant or mischievous, being relieved without the proper signs, preface death.” But in the present case there is also a slight delirium usually attends at the same time, as we said before in the history of a gangrene, §. 432.

More especially if the thorax or breast appears of a livid colour.] For this (as we have seen §. 429, No. 3.) is one sign of a gangrene, which hath been remarked by *Hippocrates* ^z, where he cautions against allowing too gross a diet, to those who are ill of the worst kind of pleurisy; for thus he has expressed himself, *has igitur ob causas, & alias hujusmodi etiam magis, qui tota utuntur ptisana, septimo die, ac celerius moriuntur: alii quidem mente laesi, alii vero orthopnoea & stertore suffocati.* At sane hos antiqui sideratos (*βλητῆς*) existimaverunt, tum ob hoc maxime, tum non minime, quod mortuis latus lividum deprehenditur, simile plagae. “But more especially from these, and other causes of the like kind, those who are allowed to feed upon the whole ptisan (*i. e.* barley and all) are carried off by the seventh day, or sooner;

^y Praediction. Lib. I. textu 52. Charter. Tom. VIII. pag 734.
^z De victu acutorum Charter. Tom. XI. pag. 27.

“ sooner; some of them dying delirious, and others
 “ suffocated, with an orthopnæa, and rattling in the
 “ lungs. But such as were thus suffocated, the an-
 “ cients esteemed blasted from heaven; as well, prin-
 “ cipally, on account of the suffocation itself, as in a
 “ great measure from their observing the side, in the
 “ patients thereby deceased, to resemble that which
 “ comes from lightening.”

Those struck with lightening are observed to have such a livid, or black and blue place in the outward skin; from whence the very learned *Triller*^a is led to believe that the word (πληγὴ) *stroke* is here used to denote the striking with thunder or lightening; perhaps it also implies a contusion, after which it is customary for the soft parts to appear livid. Perhaps this may be the reason why the poets have feigned *Æsculapius* to have perished by a stroke of thunder from *Jove*; since *Suidas*^b has recorded that he was miserably pressed by the malady, which his *æsculapian* sons (the physicians) call a peripneumony. *Cælius Aurelianus*^c observes to us, that in those deceased of this malady, the pleura is often found black, and that it was customary to imagine such were poisoned; because the bodies of those who were destroyed by poison usually appeared of this livid colour.

If the patient who had a yellowish spitting, &c.] This is a prognostic of *Hippocrates*^d, which we before mentioned §. 772; whose words run thus, *lateris dolor, ex sputis biliosis, si absque ratione evanuerit, in furorem aguntur.* “ If the pain of a pleurisy, af-
 “ ter yellow-coloured spittings shall go off without
 “ reason, the sick are rendered light-headed or ra-
 “ ving.” For the pain of the side thus suddenly re-
 moved without good omens, affords here one of the principal indicators of a gangrene already formed;
 yet

^a De Pleuritide pag. 173. ^b In voce Ασκληπιάδης Tom. I. pag. 458. ^c Acutar. Pass. Lib. II. Cap. xvi. ^d Prorrheticor. Lib. I. Charter. Tom. VIII. pag. 767. & Coacar. Praenot. No. 418. Ibid. pag. 876.

yet sometimes, by a bad translation, the inflammatory matter is thrown upon the brain, and then likewise the pain of the side will cease, as we shewed in the chapter upon a phrenzy. At the same time we are also to observe, that a delirium will often follow a gangrene that has taken up its seat in any other part of the body, as we declared above.

S E C T. DCCCCV.

Finally a pleurisy terminates, directly of itself, in death, whenever the causes thereof (§. 881.) are so violent, that the consequent pain stops or stifles the whole motion of the thorax; which, by hindering the current of the blood, through the lungs, soon creates a peripneumony (§. 848.) that is most expeditiously fatal.

This is of all ways the quickest by which a pleurisy terminates in death: for in our author's institutes, or academical lectures, on the theory of physic, it was proved, that a free respiration is necessary in man after the birth, in order to give the blood a current through the pulmonary arteries, which in the state of a foetus passed by another way. If therefore the severity of the pain suppresses the dilatation of the thorax, the blood is then too much collected within the pulmonary arteries, from whence only the thinner parts are expressed into the veins, while the thicker blood is heaped together, and brings a speedy suffocation, as we shewed at §. 877, and 883.

Aretæus^e has very handsomely remarked this way of terminating a pleurisy, although he does not appear to have been so well acquainted with the cause; for his words are, *nonnunquam sane intra hujus temporis spatium omnium in pulmonem transitus est: trahit enim*

^e De causis & signis morborum acutor. Lib. I. Cap. x. pag. 9.

enim pulmo in se ipsum, & rarus & calidus existens, & ad proxima trahenda se commovens, tuncque morbi transpositione repente homo strangulatur. “ Some-
 “ times indeed within this interval, the whole space
 “ of the lungs is filled up; for the lungs, being hot,
 “ and light, or spongy, draw the matter into them-
 “ selves first, and by moving themselves towards the
 “ adjacent matter to be drawn, and then by a tran-
 “ sition of the malady, the patient is suddenly suf-
 “ focated.”

S E C T. DCCCCVI.

FROM what has been said the reason ap-
 pears why a peripneumony always comes
 upon the back of every severe pleurisy? And
 why it is generally fatal to old people, to wo-
 men with child, and to those that are in child-
 bed or lying-in? Why binding up the thorax
 with a roller so much relieves the pain as to ren-
 der the malady supportable?

Why a peripneumony on the back of a severe pleu-
 risy, &c.] This was shewn before, under the last apho-
 rism (§. 905.)

Why generally fatal to old people, &c.] How ri-
 gid the whole body is rendered by decrepid old-age
 is known to every one, insomuch that many of the
 larger arteries are found even bony in such old sub-
 jects: and the blood, commonly grown more slug-
 gish or unfluxile in old age, has a less proportion of
 serum to its cruor or red mass: but now to resolve
 an inflammation, there are required an easy motion
 or dilatibility of the vessels, with a due proportion
 of the diluent vehicle (see §. 386.) both which means
 are wanting in old people. But since a free discharge
 by spitting is often of so much service to relieve a
 pleurisy, and asthmatical old folks generally breathe
 with

with difficulty, they will be on that account very unable to expectorate the tough phlegm, by incessant coughing, which is again another reason, why a pleurisy is more dangerous in old persons. Add to this, that old folks have rarely the strength to bear the repeated blood-lettings, that are so necessary to the cure of a violent pleurisy.

Again *Hippocrates*^f has admonished us, that old persons are not so often seen afflicted with acute diseases; and *Galen*^g in his comment upon the same place, tells us; *Siquando seni, quod rarum est, qualis juveni, oriatur febris, haec prorsus in aegrotantis perniciem finitur: immensam enim quandam causae febrim efficientis magnitudinem prodit.* “ If old persons are invaded with such a violent fever as we meet with in youths, which is rarely the case, the end of such a fever will be altogether mischievous or fatal to the patient; for that the efficient cause here producing the fever must be immensely great.”

And indeed *Hippocrates*^h reckoning up the distempers of old age, mentions no other acute disease besides an apoplexy. This is the more remarkable, because *Aretæus*ⁱ makes old folks more liable than others to pleurisies; and even says, that they oftener recover from them. But then he seems to have pronounced this rather from fancy or opinion, than from observation or experience: for, says he, as the greatest severity of the winter is more apt to produce the distemper, and the spring less; so I presume a pleurisy is frequent to old age, but not at all to childhood. But having a little before remarked, that a pleuritic patient is often strangled suddenly, when the lungs draw-in the matter of the distemper (*i. e.* when a peripneumony comes upon the back of a pleurisy;) he adds the following reason why old persons oftener recover than children and adults; *Neque enim magna phlegmone*

^f Aphorism. 14. Sect. I. Charter. Tom. IX. pag. 24. ^g Ibidem pag. 28.

^h Aphor. 31. Sect. III. Ibidem pag. 128.

ⁱ Morbor. acut. Lib. I. Cap. x. pag. 9.

phlegmone in arido corpore excitari potest, neque in pulmonem metastasis; frigidior enim (pulmo) quam in alia aetate, & spiratio parva, & attractio omnium imbecilla. “ For a great inflammation cannot easily be
 “ excited in a dry or withered body; nor can the
 “ disease be so easily translated upon the lungs: for
 “ the lungs being in these persons colder than in
 “ those of lower ages, and their breathing small;
 “ therefore their attraction, or disposition to receive
 “ the matter of the distemper, is in such of all the
 “ weakest.” From hence then it will easily appear,
 that the sentence pronounced by *Hippocrates* and *Galen*,
 ought to be preferred before the opinion of *Aretæus*;
 namely, that old persons are more rarely invaded
 by a pleurisy, but are more commonly taken off
 by it, whenever it seizes upon them. For, as we
 said before (at §. 879.) *Hippocrates*^k lays it down
 for a general rule in practice; *In morbis minus periclitantur, quorum naturae, aetati, habitui, & anni tempestati morbus magis familiaris fuerit, quam quibus in horum aliquo non familiaris sit.* “ That in diseases
 “ such are less in danger, whose constitution, age,
 “ course of life and season of the year are the most fa-
 “ miliar with, or inclined to breed the distemper, be-
 “ yond persons who have no such relation or familia-
 “ rity betwixt the malady and those general or more
 “ remote causes.”

Why to women in child-bed, &c.] Practical physicians well know, that a violent fever which arises near the time of delivery, commonly makes a suppression of the lochial flux; but what dangerous events are threatened by such a suppression will be declared hereafter, when we come to treat on the diseases of women in child-bed. An unhappy case of this kind I saw in a gravid woman seized with a sharp pleurisy about twenty-four hours before her delivery: she had a dead birth, after which the lochial flux stopped; when the pain was somewhat abated by blood-

^k Aphor. 34. Sect. II. Charter, Tom. IX. pag. 75.

blood-letting, it immediately returned again with new severity, and tho' by repeated venesections, the pleurisy was relieved, yet the fever remained equally violent or acute, the lungs began to stuff up or obstruct, and on the seventh day she expired. But what extremities of pain this poor woman suffered from the pleurisy, while she was obliged to exert the efforts of her breathing, to promote the birth of the foetus, one may more easily imagine than describe. Yet that a pleurisy is neither always nor absolutely fatal in a lying-in, appears from many observations; some of which we before related, in our comment to §. 890.

Why to women with child.] That a pleurisy should be dangerous to women far gone with child, will hardly seem strange to any, who considers, that the acute fever, which attends this malady, will go near to cause a dangerous miscarriage; and likewise that the sudden depletions of the vessels, which it requires, by repeated blood-lettings, cannot be safely practised in such women. Moreover, the abdomen being much distended in such gravid women, their breathing is very difficult, as the diaphragm can descend but for a small space, which renders a greater dilatation of the breast necessary; but that being now hindered by the pleuritic pain, the greatest anguish or oppressions ensue, from whence there is reason to fear a fatal peripneumony will speedily follow. But in our comments to §. 888, No. 6. we remarked that a pleurisy is not thus always or absolutely fatal in gravid women; having in the same place given you an instance of one who happily recovered with a discharge by spitting. More than that, I cured another gravid woman twice of a pleurisy; once in her sixth month, once in her eighth: but at both those times she had a happy delivery, and went very well through the whole course of her lying-in.

Why binding up the thorax with a roller, &c.] When we breathe, the ribs are drawn each way one from the other, and the diaphragm at the same time
urging

urging downwards, the capacity of the breast becomes enlarged, while the belly is thrust outward and upward. But when a pleurisy attends we have seen that the ribs cannot be drawn one from another without extreme pain : and therefore when the thorax is so bound up with rollers, that the ribs become immoveable, while the abdomen is left free from any compressure, in that case the dilatation of the breast in breathing is performed by the diaphragm alone, descending towards the abdomen, without any stretching of the intercostal spaces ; by which therefore the patient receives considerable relief of his pain, and there is then less danger of the lungs being stuffed up with impervious blood, from the impeded breathing. But in the mean time it must be well remembered, that thus only the pain itself is abated, without any removal of its cause ; to which therefore, the most efficacious remedies are to be still applied, lest the inflammation here seated should turn to a suppuration, and lest the physician may by mistake believe that, because the pain is thus relieved, therefore the violence of the malady itself must be so likewise.

Of a PARAPHRENITIS.

S E C T. DCCCCVII.

IF a painful inflammation like that of a pleurisy, takes up its seat in that part of the membrane, called pleura, which is spread upon the diaphragm, or upon the mediastinum, it makes a desperate malady, which physicians have called a paraphrenitis.

In our history of a pleurisy it was shewn at §. 877. what a variety of parts this malady might occupy, since the pleura lines all the internal circumference of the thorax; and therefore an inflammation of the diaphragm, which separates the breast from the belly, properly belongs to a pleurisy. Yet it has been customary to give this malady a peculiar name, and on account of some difference in the symptoms, to allot it a distinct place of treatment.

We read in *Ruffus Ephesus*¹ that the membrane which partitions off the lower viscera from those of the breast, is called *diaphragma* and *phrenes*: but we remarked at §. 771. that the ancient physicians usually added the termination *itis*, to the name of the part affected, when they intended to denote an inflammatory disease of the part so named. By this rule therefore, an inflammation of the diaphragm ought to be called *phrenitis*; but then this name being already adopted to another distemper, namely, when a constant and fierce delirium arises from the brain itself originally affected, with an acute continual fever; therefore for distinction sake, this malady is called *paraphrenitis*. 'Tis true indeed, the preposition (*παρά*) under, prefixed to the names of diseases,

¹ De corporis humani partium appellationibus Lib. I. pag. 38.

eases, frequently denotes a less degree of their violence (see §. 783.); but paraphrenitis is no where found to denote a slighter kind of phrenzy; for a symptomatical phrenzy, or a febrile delirium, go by the name of *paraphrosyne*.

Yet *Hippocrates*^m has described an inflammation of the diaphragm under the name of phrenitis; but he first admonishes that there are others of the same name arising in different maladies; but the first, he adds, is to be cured like a peripneumony. Also *Aegineta*ⁿ, and *Trallian*^o, have mentioned a phrenitis of the diaphragm, that arises not from any distemper of the head; although they appear not as the givers of this name peculiarly to the malady, only inform us that it is to be distinguished from a true phrenzy, principally by its injuring the breathing. Nor is the name paraphrenitis to be found in *Galen*^p, where he treats of this malady.

S E C T. DCCCCVIII.

WHICH malady much more frequently occurs than is commonly supposed, although when present it be often either unknown, neglected, or else treated under the title of another malady.

Since, therefore, there is mention made of this distemper in most of the ancient physicians, and the major part of the causes of a pleurisy (§. 881. No. 2.) are disposed to excite a like malady in the diaphragm, more especially a filling of the stomach with large draughts of cold liquors; it seems surprising that this distemper should be so rarely complained of, or described in common practice; in so much that *Peter Salius* ranks it in the class of diseases that are not

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treated

^m De Morbis Lib. III. Cap. ix. Charter. Tom. VII. pag. 586.

ⁿ Lib. III. Cap. vi. pag. 28.

^o Lib. I. Cap. xiiii. pag. 45.

^p De locis affectis Lib. V. Cap. iv. Charter. Tom. VII. pag. 488.

treated of by common practitioners: at least it is certain, that the situation of the diaphragm, and its whole ample extent, is not clearly known to every one; for beginning from the loins, it ascends so high as to cohere with its tendinous part to the pericardium, and partitions off, by a very broad surface, the thorax from the abdomen. In the splendid anatomical tables of the celebrated *Albinus*, there is a figure of the diaphragm in its natural situation, which one may better learn from thence than from any description^a; and from whence it will not appear wonderful if an inflammation of the diaphragm is sometimes taken for a malady in some of the other parts. However such a mistake has been commonly of no fatal consequence, with respect to the cure, as it requires almost the same treatment as a pleurisy itself, which we shall shew at §. 911. From thence also it will appear that various symptoms may arise according as different parts of the diaphragm are occupied by the phlegmon; we see for certain that it grows to the pericardium, transmits or gives a passage to the gula, aorta, vena cava, &c. lies closely incumbent about the liver, spleen, kidneys, &c. from whence an inflammatory swelling formed in this or that part of the diaphragm, may excite various maladies, by injuring one or the other organ that lies next to it: but the principal, or most universal signs, are reckoned up in the aphorism following.

S E C T. DCCCCIX.

A Paraphrenitis is known from an acute continual fever, with an ardent, or inflammatory pain of the affected part of the diaphragm, which by its nervous membranes can hardly bear it; and this pain greatly increases by inspiration, coughing, sneezing, filling of the

^a Tab. musculorum IV. & histor. musc. Lib. III. Cap. LXXXI.

the stomach, reaching, vomiting, compressing, or straining of the belly at stool, or at discharging the urine; the breathing is hereby rendered high up in the breast, small, quick, and suffocative, performed by the ribs or breast only, while the abdomen continues unactive, a constant delirium, a drawing inwards of the *hypochondria*, a sardonic, or convulsive laughter, a convulsion, a raving, and a gangrene.

That a fever attends in every inflammation, was shewn before at §. 382, No. 8; and in the same place it was observed, that the fever is so much more violent in proportion as the irritation of the fibres is greater in parts inflamed; but the greatest irritation of all succeeds in tense or stretched membranes. Hence it is that so violent a fever often arises from a whitloe of the finger, and when the membrane that lines the auditory passage is inflamed; which last is certainly a dangerous malady, as *Hippocrates* hath admonished us in his prognostics. But the diaphragm is always in a state of tension, even when it exerts no action. When the abdomen of a dead subject is laid open, while the thorax is left entire, it plainly appears in what manner the diaphragm forms a concave dome, with its convex part towards the breast; but so soon as the breast is perforated on each side, to let the air pass into the capacity of the thorax, the diaphragm that was before tense, and urged by the pressure of the atmosphere up into the breast, becomes flaccid^r. But when the diaphragm contracts, so as to press down the contents of the abdomen, and enlarge the capacity of the breast for inspiration, all its fibres are then stretched by the muscular action, which will make a new increase or addition to the violence of the pain: thus one may perceive how calamitous a case it is to have an in-

^r Vide Herm. Boerhaave Instit. §. 607.

flammation seated in the diaphragm, which, either in action or at rest, is always in a state of tension. Hence *Hippocrates* tells us, in treating upon this malady^s, that such miserable patients are so full of pain that they cannot bear themselves to be touched.

What has been said will easily shew how immensely the pain must be increased when the inflamed diaphragm is shocked by coughing or sneezing, or when by filling the stomach it is somewhat more extended or thrust up into the capacity of the breast: how dreadful or excruciating must the pains here be, when the muscles of the abdomen and the diaphragm are both convulsed together by a vomiting, see §. 652. How impossible must it be for such miserable patients to make the necessary discharges by stool and urine, in which the inspired air is required to be confined and compressed with a considerable force by the abdominal muscles and diaphragm.

But the breathing is here much more difficult than in a pleurisy, in which the breast being retained immoveable by rolling up the sides or ribs with bandage (§. 906.), the respiration is then carried on by the contraction of the diaphragm only, with the motion of the abdominal muscles. But in this case the miserable patient not daring to move the diaphragm, uses the utmost efforts to dilate the breast, and continue the respiration by moving the uppermost ribs only from each other: from hence proceeds that high, or labouring and small, but quick respiration, joined with a most uneasy sense of suffocation; concerning which see the comment to § 734.

But a constant delirium is a companion of a paraphrenitis, as *Hippocrates*^t and *Galen*^u have informed us, and as the universal consent of all practitioners, after them has confirmed to us. Even *Galen* pronounces that no other part of the body creates a constant delirium but the diaphragm; *adeo ut veteres putaverint,*

^s Morbor. Lib. III. Cap. ix. Charter. Tom. VII. pag. 586.

^t Ibidem. ^u De locis affectis Lib. V. Cap. IV. Ibidem pag. 489.

putaverint, ab hac parte inflammata fieri phreniticos, atque ob eandam suspicionem Φρένας eam appellaverint, tanquam sapienti parti (cerebro) conferat quidpiam.

“ In so much that the ancients believed the phren-
 “ fies, or light-headedness arose from this part in-
 “ flamed; and from the same opinion, supposing it
 “ to have a particular consent, or communication
 “ with the seat of wisdom, the brain, they therefore
 “ called it Φρένας.” But he observes the great dif-
 ficulty of breathing, here particularly points out this
 malady, as differing from a true or primitive phren-
 sy, in which last the breathing is commonly large
 and slow: but observations of the best credit teach
 us that membranous parts, which are very tense and
 inflamed, after they have excited the most severe
 pains, produce a delirium of the worst kind. Thus
Hippocrates ^w observes, that from a sharp ear-ach,
 with an acute continual fever, the patient is in dan-
 ger of perishing with a delirium. Perhaps the in-
 flammation here seated so near the brain, might on
 that account be judged more apt to disturb its func-
 tions; but we see that even in a whitloe of the fin-
 ger’s end, that is of the worst or most painful sort,
 the patients are often delirious, to which I am my-
 self a witness (see §. 4.). Moreover from the breath-
 ing so much hindered in this malady, the return of
 the venal blood from the head is intercepted, be-
 cause the right side of the heart cannot freely send its
 blood through the lungs to the left; and from hence
 again all the functions of the encephalon will be dis-
 turbed.

But the hypochondria are here drawn inwards, be-
 cause these patients, to avoid the extremity of pain,
 use all their endeavours to hinder the diaphragm from
 descending at the time of inspiration; for this reason
 they in a manner hold it still, drawn upwards; but
 by that means the liver, stomach, and spleen are bu-
 ried more under the ribs, or within the hypochondria.

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Even

^w In Prognostico Charter. Tom. VIII. pag. 671.

Even this retraction or sinking in of the hypochondria is by *Galen** counted a pathognomic sign of a paraphrenitis; for thus he expresses himself; *Atque ut summam dicam, eorum symptomatum, quae phrenitidem antecedere diximus, aut nullum apparet, aut perexiguum in iis, quibus diaphragma inflammari incipit; ut rursus sursum revelli hypochondrium, ilicò ab initio septi transversæ affecti, proprium sit: in cerebro vero (affecto) posterius accidit, non incipiente affectu, sed quum factus jam fuerit.* “But to speak conclusively in this matter, those patients, who have an incipient inflammation in the diaphragm, have few or none of those apparent symptoms, which we have proposed as the antecedents to an original phrenzy: and again, the revulsion of the hypochondria upwards, immediately from the first attack is a sign peculiar to this affection of the diaphragm: but when the brain itself is affected, this last symptom does not appear in the beginning of the malady, but only after it has been completely formed for some time.”

From what has been said, then, it is easily apparent, that an inflammation of the diaphragm, as a part that is always stretched, and in motion, may suddenly terminate in a gangrene; and then, before death, we know, convulsions and ravings are frequently observed. But now we are to consider the sardonic or convulsive laughter, that is usually observed as a peculiar symptom of this malady. It has been long ago, by the ancients, recorded, that the muscles of the face become so convulsed, from strong poisons lodged in the stomach, that the corners of the mouth or lips being drawn down, the visage begins to put on the appearance of a smile, or incipient laughter; and this is a property which the writers upon the materia medica, have ascribed to the marsh or water-crows-foot, that has a smallage leaf [*ranunculus*

* De locis affectis Lib. V. Cap. iv. Charter. Tom. VII. pag. 490.

culus palustris apii folio] which they have therefore also named *apium risus* & *herba sardoa*, being a plant that has a force extremely caustic. Hence the term *sardonius* has been proverbially applied to those who uncautiously laugh at what turns to their own prejudice. But very ancient observations likewise inform us, that such kinds of laughter are excited from injuries of the diaphragm. This has been recorded by *Hippocrates*¹. And in *Pliny*² we read, “ that in battles, and in the shows of gladiators, wounds thro’ the præcordia or diaphragma, brought death with a laughter:” but that by the term præcordia he understands the diaphragm, appears evidently in the same place. We see also in sleeping infants, that the face is sometimes drawn into a smiling posture, when they are about cutting their teeth; and thence it has been usual for their careful mothers to foretel convulsions, which frequently follow after. From these particulars then, it appears, that this is a symptom justly to be suspected.

S E C T. DCCCCX.

THE various terminations of a paraphrenitis, are the same with those of a pleurisy (§. 884. 892. 896. 897. and 899.); only here the incessant and ample motion of the part, its being immediately necessary to life, composed of nervous and stretched membranes, render all those events more precipitate, and more fatal; and from hence, may follow a purulent ascites.

All that has been before advanced concerning the various endings of a pleurisy into health, another disease, or in death, may be also here applied to the present

¹ Epidem. V. textu 50. Charter. Tom. IX. pag. 351. ² Lib. XI. Cap. xxxvii.

present malady. But that all those symptoms must be here more cruel or mischievous, and inclined sooner to a mortification and death than in a pleurisy, is easily apparent, from the action of the diaphragm, and its connexion with the other adjacent parts. For this is required to be continually moving in respiration; the pericardium coheres with the tendinous part of the diaphragm, which therefore receives upon it, all the strokes or vibrations of the heart and the aorta, which last descends thro' its fibres, as do also the gula or œsophagus, and vena cava ascendens. Hence we may learn what a miserable condition the patient must be in, who has an inflammation of the diaphragm, and how dangerous that case must be: the truth of all which is confirmed by the testimony of *Hippocrates*^a who pronounces, *Hic autem morbus letalis est; tertio namque die, aut quinto, aut septimo moriuntur. Si vero leviter corripuerit, ut peripneumonia judicat.* “ But this disease is fatal; for the patient dies “ of it by the third, fifth, or seventh day. But if it “ invades only in a slight degree, it comes to a salutary “ crisis like a pleurisy.”

But if a pleurisy ends in an abscess, it lets the matter into the capacity of the breast, and causes an empyema, if it does not point outward, and discharge itself externally: but an abscess of the diaphragm may both pour out its matter into the capacity of the breast, and into that of the abdomen; in which last case it produces a purulent ascites, filling the capacity of the abdomen, and distending it with matter there accumulated. But the malady is called an ascites only, when a mere watery serum is collected in the cavity of the abdomen, as we shall hereafter shew in the chapter on a dropsy.

^a De morbis Lib. III. Cap. ix. Charter. Tom. VII. pag. 586.

S E C T. DCCCCXI.

THerefore the treatment of a paraphrenitis requires the same distinctions and cautions, with almost the same remedies, as were before directed for a pleurisy; excepting what relates to the difference of the part affected, which here admits not of topicals. But emollient clysters, extending near to the parts affected, are often useful.

For the disease itself is of the same nature with a pleurisy, from which it differs only by the part wherein it resides. But fomentations, liniments, and plasters, are here of less use than in a pleurisy, because they cannot be so nearly applied to the affected parts. But as clysters, thrown into the bowels, may extend thro' the whole length of the colon, even to the end of the ilium, they may be here very useful; because the colon, when it has reached as high as the liver and spleen, lies very near to the diaphragm, and therefore, that intestine filled with clysters of emollient decoctions, will have the effect of a mild and discutient foment, applied to the inflamed diaphragm.

S E C T. DCCCCXII.

BUT when the diaphragm, first inflamed, becomes afterwards suppurated, the abscess breaking, pours out its contained matter into the capacity of the abdomen, wherein it is therefore collected or heaped together into a tumour, and by putrefying and eating thro' the viscera, it brings on a miserable consumption and death.

What mischiefs are to be feared from the breaking of an abscess, and pouring out its matter into the capacity of the breast, we before (§. 894.) shewed; but the like effects will also ensue, when matter drains from an abscess of the diaphragm into the capacity of the abdomen. If now it be considered, that the diaphragm is always in motion, and that the circulation through its vascular fabric is from the vicinity of the heart very rapid, one may thence perceive that a great quantity of matter must be there gathered in a short time, and that the ulcer of the diaphragm will admit of no cure, more especially when it is constantly watered with confined matter rendered acrid by long standing. 'Tis true, indeed, the matter poured out will, by its own weight, drain to the bottom of the abdomen; but being there long confined and corrupted, its putrid vapours will infect all the viscera, and will itself corrode all the parts within its reach.

S E C T. DCCCCXIII.

IN this case then the malady, however well known, is wholly incurable.

There are indeed many reasons which, if rightly considered, shew us the extreme difficulty of a cure in this disorder, or which even persuade us that a cure is altogether impossible; for a cure here requires a discharge of the matter confined in the abdomen, and a re-union or consolidation of the parts ulcerated; and at the same time this discharge must be made very early after the breaking of the abscess, namely, before the matter has corrupted by stagnating, and infected the contiguous viscera. We may be able by the signs already mentioned (§. 893,) to discern when a suppuration is formed; and from the sudden relief of the symptoms (see §. 894.) we may learn, that the abscess is broken; but as yet we are not
certainly

certainly acquainted whether the matter has made its way into the capacity of the breast, or that of the abdomen. 'Tis certain that a pound or two of matter will not distend the abdomen so much as to shew in it any considerable tumor; and an abscess of this part, when it breaks, often contains much less matter than that quantity; and therefore such a purulent ascites is not well known before the continual draining from such an open ulcer, has distended the full abdomen to a considerable bulk; and as this cannot be perceived 'till a considerable time after the breaking of the abscess, any attempts to evacuate the matter will then come too late. Add to this, that laudable matter has almost the thickness of cream from milk, and will therefore not flow out by the paracentesis or tapping of the abdomen, but will require a more ample passage to be made by a broader wound, penetrating into the capacity of the abdomen, from whence the matter may find a way out, which wound itself will be more than a little dangerous. But again, how shall a broken vomica or abscess be healed, which is seated in the diaphragm, that is never at rest? What danger is there of sudden death, if the diaphragm, eaten through by the abscess, shall admit the air to pass from the abdomen into each capacity of the pleura or breast. *Hippocrates*^b has therefore justly pronounced of a suppuration formed about the abdomen, *Si quidem de se foras significationem praeberit, & pus exierit, sani evadunt; si vero sua sponte intro proruperit, pereunt.* “ That if
“ indeed it points outward, and discharges the purulent matter, the patient may recover health; but
“ if such suppurations break spontaneously inwardly,
“ they are fatal.” *Aretæus*^c also informs us, that a suppuration of the diaphragm advances more hastily, but is also more dangerous or fatal.

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^b De Morbis. Lib. Cap. vii. Charter. Tom. VII. p. 549.

^c Morbor. diuturnor. Lib. I. Cap. ix. p. 39.

It was before observed, where we treated upon the various parts which might be the seat of a pleurisy (§. 877.) that the inflammation might be in any part through the whole extent of the membranous pleura, and might therefore lodge not in the sides only, but in any other quarter of the breast. At the same time, we also promised to say something more particularly concerning inflammation in the mediastinum and pericardium, when we should come to treat professedly on a paraphrenitis in its proper chapter; for that the mediastinum and pericardium are parts covered by the membrane of the pleura. But in order to a right understanding of the maladies to which the mediastinum is liable from an inflammation, we ought first to consider its origin and situation.

'Tis well known, that the whole internal surface of the thorax, in a dead subject, appears smoothly polished, because it is on all sides lined equally by the membrane of the pleura; but where the pleura of each side has reached the column of the vertebræ; in the back part of the thorax, it then departs from the ends of the ribs, and rises up towards the fore-part of the breast, even as far as the sternum; whence in treating upon fatal wounds of the thorax (§. 170. No. 4.) we remarked, that each side or cavity of the breast, is surrounded with its distinct bag or membrane, in so much that the two pleuræ may be considered as two bladders, applied with their sides one to the other, and growing together in the parts of contact: and it is the duplicature or doubled parts of these membranes, dividing the thorax into two cavities, that we call the mediastinum. But as the membranous pleuræ, advance from the bodies of the vertebræ, by receding from each other, they leave a triangular space, filled with the cellular substance, and compleated behind by the column of the vertebræ; and thro' this space are conducted the wind-pipe, gula or œsophagus, the thoracic duct, &c. but thence forwards, the said duplicated plates or lamellæ of the pleura,

pleura, cohere close together, excepting a small portion of their upper part, where the gland called thymus is placed.

Now we are taught by practical observations, that this mediastinum is often inflamed in acute maladies of the breast; and *Avenzoar*^d writes, that himself laboured under this malady: but as that author is not every where easily had, you may read what the learned Dr *Friend*^e has extracted from him; or you may consult *Zacutus Lusitanus*^f, who has also given us the history of the present malady. But *Avenzoar* recovered from his distemper after a very copious bleeding from the arm, increased by the ligature or bandage coming off in the night from the vein which had been opened; and therefore, there is reason to doubt, whether this physician was not mistaken in the diagnosis of his own malady. But what *Avenzoar* has wrote concerning an inflammation of the mediastinum, is very fairly confirmed by the observations of *Peter Salius Diversus*^g, who seems never to have read this Arabian physician, and yet recounts almost the same symptoms as are read in the other, and afterwards saw in the body of the deceased patient, that there had been an inflammation of this part. For he observed, that some who lay ill of an acute fever with great restlessness, and intense thirst, perceived a severe burning heat about the heart and lungs, while the breathing continued very small and quick: yet there was here no acute pain in the breast, but a suffocative oppression, rather than a pain, was felt towards the sternum: a cough here attended, which was dry in the beginning, but afterwards turned coloured, and commonly of a yellow complexion; the pulse in all these patients was like that of persons afflicted with a pleurisy, insomuch, that he would have thereby pronounced

^d Lib. I. thesaur. Tract. 16. Cap. vi. ^e Histor. of physick. Tom. II. pag. 80. ^f De medicorum principum historia Lib. II. Hist. 23. pag. 223. ^g De febre pestilenti, & curationibus quorundam particularium morborum, &c. Cap vi. pag 247.

nounced them really pleuritics, if the pain of the side had not been wanting. But as he well observes, the mediastinum being inflamed is little painful, because it is not so much stretched as the pleura, in dilating the thorax by respiration. But when this inflammation has spread itself into the pericardium that lies near, it is usual for faintings to join the malady, and for the pulse to become wonderfully disturbed. But he confesses, he gave a more diligent attention to all these circumstances, because, being then young, and compleating his studies, under very eminent professors, he had seen a man of quality labouring under a distemper, which had all the symptoms above enumerated, and who, beyond all expectations, expired on the ninth day of the malady, when every thing seemed to change for the better; but he was several times troubled with fainting fits before his death. But as the physicians were here doubtful of the malady, and as his friends suspected poison had been given him, they desired an enquiry to be made after the cause of death in the body of the deceased. But an inflammatory swelling of considerable bulk was found in the mediastinum; and it also appeared, that an inflammation had in part seized upon the pericardium. Nor was there any other apparent cause of death found in the body of the deceased.

'Tis probable inflammations of the mediastinum, and pericardium, happen oftener than is commonly believed; for indeed the causes which are observed so frequently to produce a pleurisy, may very powerfully act upon these parts; namely, the cold air, or the drinking of large draughts of cold liquors, by persons much heated, either by the weather, fire, or exercise, &c. (see §. 881.); but the pericardium is seated betwixt the lungs, by which it is almost every way surrounded, so that the cold air inspired, is by the dilated lungs applied to the contiguous mediastinum and pericardium; and the œsophagus, transmitting cold drinks, go along betwixt the two re-
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ceding plates of the mediastinum, and passes the diaphragm behind the pericardium: but the principal signs of this malady are such causes going before, and a great heat felt in the midst of the thorax, while there is no pleuritic pain; to which add a great disturbance of the pulse, and fainting fits, when the inflammation has spread to the pericardium. Frequently a malady of this kind may accompany a pleurisy, or a paraphrenitis, and occasion a surprising train of the worst of symptoms.

Here the prognosis of the malady imports more danger than in a pleurisy, more especially if the pericardium be inflamed at the same time, because of the nearness of the heart, and the very swift circulation of the humours through these parts; therefore the cure of a pleurisy (§. 890.) must be here imitated without delay, that the inflammation may be removed by a resolution; for all other ways of terminating an inflammation, either soon bring death, or else leave behind the most troublesome or even incurable maladies: for if a suppuration here follows, the matter confined in the cellular substance that lies betwixt the plates of the mediastinum, may procure to itself wonderful passages, as it descends by its own weight betwixt the pleura, and the bodies of the vertebræ, where it may evidently form incurable sinuſs and fistulæ. If a suppuration shall be formed in the pericardium, it may penetrate the cavity of that bag, and lie round the surface of the heart. *Rondeletius*^h, who has observed this malady, found in a man of quality, the heart surrounded with a serous humour, changed into a corrupted matter.

*Columbus*ⁱ found the heart every way surrounded by an abscess, by which it was almost consumed: but also the other ways of terminating an inflammation have been here observed. It was before shewn at §. 897, that frequently after a violent pleurisy

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^h In libro de dignoscendis morbis Cap. x.
mica, Lib XV. pag. 267.

ⁱ De Re Anatomica.

the lungs cohere or grow to the pleura, or else that the pleura has been callous or schirrhous: the same accidents may also happen to the pericardium inflamed so that it may grow to the heart in every point, and then anatomists have judged the pericardium to be wholly absent. *Columbus*^k opened a student who died in the university of *Rome*, troubled with frequent fainting fits, in one of which he fell and expired; in this subject he believed there was no pericardium; but it seems much more probable that the pericardium was here grown into one with the heart itself. *Ruyfch*^l kept by him the heart of a man who laboured under a continual fever, with an intollerable pain about the fore-part of his breast; but the outer surface of this heart was altogether rough or unequal, from the pericardium being grown to its surface: we see also that a true schirrhous induration of the pericardium has been observed by authors of the best repute. That very learned physician Dr *Freind*^m assures us, he saw the pericardium grown to above the thickness of a quarter of an inch throughout its whole extent, and so firmly cohering with the heart itself, that it could be no where separated without laceration; but this pericardium was partly schirrhous, and partly filled with little abscesses.

It may be here questioned, whether after an inflammation of the mediastinum, a latent abscess under the sternum, cannot have a discharge of its matter by an opening through the sternum, lest the pericardium and heart should be corroded by the confined and putrid matter? *Aretæus*ⁿ mentions an empyema formed in the sternum, and observes that it is a long time before it points outward: but to our misfortune the text of *Aretæus* is here mutilated or imperfect; and in his first book of the cure of chronical diseases there is wanting, among other particulars, the chapter in which

^k Ibidem pag. 265. ^l Thesaur. Anatom. VI. No. 36. ^m History of physick part 2. pag. 89. ⁿ De causis & signis Morbor. diuturnor. Lib. I. Cap. ix. pag. 37, 39.

which he ought to treat on the cure of an empyema, and therefore we are obliged to continue ignorant of what he had to say upon the present subject. *Galen*^o gives a remarkable case of a lad who received a blow upon his sternum in the wrestling place, and being negligently treated, that part of the sternum appeared afterwards corrupted by a sphacelus. *Galen* trusting to anatomy, in which he was so well skilled, cut out the carious part of the sternum, and tells us he was able to see the naked heart, whose pericardium was eaten through, under the carious part of the bone; yet this lad was cured in a short time. At §. 895, we gave a remarkable case, in which the matter after a suppurated pleurisy made its way through the sternum; and therefore it is evident such a method of cure is possible. And Dr *Freind*^p informs us, that a very skilful surgeon often trepanned the sternum, for abscesses that were seated in the mediastinum, from the venereal disease, wherein he observed them to be frequent attendants.

But since the treatise of *Peter Salius* is rarely to be found, you may read the chapter of *Schenkius*^q that contains the whole; *de inflammatione membranarum intersepiuntium & pericardii*.

^o Lib. VII. de Anatomica administratione Cap. XIII. Chartet. Tom. IV. pag. 161.

^p History of physick part. 2. pag. 85.

^q Lib. II. Observat. Medicin. pag. 288.

Of an HEPATITIS, and of the several kinds of the JAUNDICE.

S E C T. DCCCCXIV.

EVEN the liver is also liable to an inflammation in the like manner as we have seen in the several other viscera, and parts hitherto considered; yet this malady is seldom suspected to be there; and, perhaps, from the smallness of the hepatic artery, and the less impetus of the blood in the vena portarum, the liver may be not so often subject to inflammation as other parts.

From what has been said in our history of an inflammation at §. 373, and 374, it appears evidently a malady that may take place in all the viscera of the body; and consequently that it may be seated also in the liver: but it has been customary to call this distemper *hepatitis*, for reasons you may see mentioned at §. 771. The ancient physicians called those patients *hepatical*, who were afflicted with an inflammation of this viscus; for thus says *Galen*^r in his definitions, *hepatici sunt, quos jecoris dolor comitatur diuturnus cum tumore & duritie, & corporis decoloratione, supervenit illis febris ardens & lingua exarescit.* “Hepatic patients are such as have a continual pain, “hardness, and swelling of the liver, with an icterious or discoloured body; such have an ardent “fever and a dry tongue.” But it is to be observed that *Galen* collected these definitions from the works of the physicians who lived before him, and who recorded those particulars in their writings^s; and, therefore

^r *Galen. defin. medic. No. 274. Charter. Tom. II. pag. 264.*
^s *Ibidem in prooemio pag. 232, 233.*

fore that these definitions do not always contain the direct sentiments of *Galen* himself, as plainly appears from another passage of this great author^t, where he expressly says that he does not by the term hepatic, understand those patients who had their liver inflamed, suppurated, or schirrhous; but that he particularly used this name for such as had a weakness only of the functions proper to this viscus, without any other manifest disorder of it: but *Celsus*^u assures us, that the disease of the liver, which the *Greeks* called (ἥπατινὸν) hepatic, was as well chronic as acute. However most physicians at present usually understand the term hepatitis to comprehend the acute or inflammatory distempers of the liver; but those who have any chronical disorders of this viscus, they have usually termed hepatic, or bad livered.

But since the arteries that go to the liver are but small in proportion to the bulk of so considerable a viscus, and the blood which is driven through the liver from the trunk of the vena portarum, moves on but very slowly, as it does in the veins, having now no further assistance from the moving powers of the heart and arteries; on these accounts probably a true inflammation of the liver is not so frequent as in other parts; but very stubborn and chronical obstructions are for these reasons much oftener formed in this tender gland: even some eminent physicians, and among them Dr *Frederic Hoffman*^w, have believed “ that a phlegmon of the liver, if it be not amongst
“ the things which exist only in fancy, is however
“ to be referred to the most rare or unfrequent diseases.” But notwithstanding this, practical observations assure us, that purulent vomicas, or abscesses of the liver, are very often found in the opening of dead subjects, which prove that an inflammation must have been there before, since they came

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^t De compos. medicam. secund. locos Lib. VIII. Cap. vi. Character Tom. XIII. pag. 585.

^u Lib. IV. Cap. viii. pag. 213.

^w Opusc. Patholog. Pract. dec. 2. dissert VIII. pag. 484.

not from any translation of matter, lodged in other parts of the body.

S E C T. DCCCCXV.

THE hepatitis, or phlegmon of the liver, is therefore seated in the final extremities of either of the said vessels (§. 914.) which convey blood to the liver after the manner, or with the same effects, as arteries; and therefore this inflammation, like that of the lungs, last considered, is two-fold, in its seat and origin; yet so that one may easily follow as a consequence from the other.

Since then an inflammation can take place only in those vessels, through which the humours are conveyed with a directed motion from the basis towards the apex of the cone of the vessel (see §. 119, and 371.); 'tis therefore evident this malady may be seated in the branches of the vena portarum dispersed through the liver, as well as in the branches of the hepatic artery; for all the venal blood returning from the other viscera of the abdomen, flows together into the trunk of the vena portarum, and from that venal trunk it is again propelled throughout the liver, by converging branches of the said trunk: but anatomical injections have also taught us, that the branches of the hepatic artery, which convey blood for the nourishment of this viscus, are distributed throughout every point of the liver, as well as the arterial branches of the porta, which serve for the secretion of the bile, and that they run in company, by the sides of the former, throughout the whole substance of the liver; and even seem in many places to join, or open one into the other by anastomoses; for in a happy injection of the vena portarum, I have known the waxen matter return through the hepatic arteries; and

and therefore here, as well as in the lungs, a twofold inflammation may take place: but it deserves to be remarked, that the effects of an inflammation in the liver from a stuffing up of the portal branches, or of the ends of the hepatic arteries, will be very different from the effects of an inflammation in the ends of the pulmonary, and of the bronchial arteries of the lungs; for in both those of the lungs, a very considerable force, from the heart, that is very near, urges upon the inflamed parts; but in the liver, the branches from the porta are filled with the blood from the veins of the abdominal viscera, moved on much more slowly than the blood of the hepatic arteries that go throughout the liver. On this account the effects, which arise from the blood urging upon an inflamed part (see §. 381, and 382.), and which are likewise the signs demonstrative of a present inflammation, do not so plainly shew themselves when the malady lies in the branches of the vena portarum; and this seems to be the reason why some physicians are often mistaken in their diagnosis of this distemper.

*Galen**, and many physicians after him, have supposed a considerable difference of the distemper according to the certain part, or region of the liver that the inflammation occupies, as whether it be in the convexity or gibbous part, that lies next the diaphragm, or in its hollow part, that covers a portion of the stomach and duodenum: but more especially he will have the diagnostic signs to be different, in these two cases, because different parts are pressed and irritated by the inflammatory swelling of the liver; so that if the phlegmon be seated in the convex part of the liver, he observes there will be a greater difficulty of the respiration, a pain of the right side will reach up to the neck, and a cough will also attend: but if the concave part of the liver be inflamed,

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* De locis affectis Lib. V. Cap. vii. Charter. Tom. VII. pag. 495.

he then tells us a sickness, or reachings, vomiting, and great thirst will be more observable. Moreover he makes a difference in the critical termination of an hepatitis, according to this diversity of the parts affected in the liver; for in another place^y he says, *hepatitis gibbae partes inflammatae tribus praecipue crisis modis obediunt: haemorrhagiis ex dextra nare, atque sudoribus utilibus, & urinis copiosis. Simae autem partes excrementis alvi biliosis, atque sudoribus, nonnunquam etiam & vomitibus.* “The gibbous parts
 “of the liver being inflamed, observe commonly
 “three kinds of crisis, or salutary termination;
 “namely, by hæmorrhages from the right side of the
 “nose, by relieving sweats, and by copious urines;
 “but that the hollow parts of the liver are relieved
 “by bilious stools and sweats, and sometimes also
 “by vomitings.” But it seems probable that the ancients supposed the gibbous part of the liver to be inflamed when the malady resided in the extremities of the hepatic arteries; and to be in its hollow part, when the extremities of the vena portarum were in like manner affected: for since the liver takes some of its arteries from the diaphragm, and from the suspensory ligament, by which it is tyed to the diaphragm; the circumjacent parts are often inflamed so as to cause by the motion of the diaphragm, a pain in breathing, which is by *Galen* laid down as the principal diagnostic sign of an inflammation in the gibbous part of the liver. On the other hand he accounts a sickness or aversion to food with great thirst, or a vomiting, to be the principal signs of an inflammation in the hollow part of the liver; all which symptoms are easily understood from the disturbed action of the chylicative viscera, occasioned by the impeded course of the blood through the extremities of the vena portarum: nor does *Galen* in this last case mention any thing of remarkable pain. When we treated of anguish, as a symptom of fe-

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vers (see §. 631, & *seq.*), we remarked that an obstruction, or arrestment, of the blood, in the extremities of the vena portarum, occasions rather a great oppression than any sharp pain. But on the contrary practical observations seem to teach us that there is a great sense of a burning heat, and a severe pain, when the ends of the hepatic arteries are inflamed. Thus the celebrated *Bianchi*^z observed such an epidemical malady in the military hospitals, during very dry and scorching summer heats. These patients being immediately seized with a very acute fever, perceived a most severe burning in their right hypochondrium; their urine was flame-coloured, and scarce any swelling, or even tightness was perceptible about the liver; but in some an erysipelatous redness of the skin, often of a deep colour, occupied the whole right hypochondrium. Those who recovered of this distemper had an abatement of the symptoms on the third day, and on the fourth they vanished, without any apparent crisis; but those who perished by it, having no abatement either of the fever, or of the symptoms, became suddenly delirious, and expired on the fourth or fifth day; but he observes the pain here was not a heavy one, as from the stretching a part, but a very sharp, piercing, or bruising pain. *Hippocrates*^a has also described an hepatitis like this arising in the summer time from drunkenness, and the eating of beef, in which “he observed
“ the pains to invade very sharply, and to continu-
“ ally increase, without leaving the patient free one
“ hour.” But that the inflammation which came under the observation of the celebrated *Bianchi*, was erysipelatous, he concludes partly from the redness of the right hypochondrium, and in part from observing such a distemper in a woman^b, who was threatened with death on the third day, but an ar-
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^z Hist. hepat. part. 3. Tom. I. pag. 426. ^a De Internis Affectionibus Cap. xxx. Charter. Tom. VII. pag. 660. ^b Hist. hepat. part. 3. Tom. I. pag. 434.

dent erysipelas breaking suddenly out upon her whole face; upon the fourth day, the fever, and other complaints about the liver, went off without any other evacuation. However the slow motion of the blood thro' the branches from the vena portarum does not seem apt to excite such violent heats.

If it be inquired whether in such an acute hepatitis, the malady may not be easily spread to the adjacent diaphragm, so as to produce hiccoughs? We answer that it seems very probable. *Hippocrates*^c informs us, “that an hiccough comes upon an inflammation of the liver:” and in another place^d he pronounces, “that an hiccoughing in an inflammation of the liver is a bad sign.” And *Celsus*^e likewise accounts this a sign of an acute malady in the liver.

S E C T. DCCCCXVI.

BOTH the arterial and the portal inflammation of the liver (§. 915.) have the like causes which precede them, namely, the general causes (§. 375. 380. and 881.) that produce inflammations of any other kind, more particularly determined towards these parts; to which add some (out of a great number that might be reckoned up) which have a more peculiar tendency and influence upon the hepatic system: such as an exorbitant fatness of the omentum, an atrabiliary or gross blood, a bilious constitution; acrimony from any humour or matter, purulent, ichorous, or scorbutic, stagnating in any part; more especially when these are dissolved, moved and directed toward the liver by external heat, a fever, exercise, aliments, medicines,

^c Aphor. 58. Sect. V. Charter. Tom. IX. pag. 230. ^d Aphor. 17. Sect. VII. ibidem pag. 300. ^e Lib. I. Cap. viii. pag. 230.

dicines, or poisons: to these join a greasy acrid and adust state of the bile itself, put into motion by its particular causes; a stone or a chalky matter, a schirrhous, callus, steatoma, abscess, cancer, or a worm, blocking up any part of the liver, gall-bladder or biliary ducts, straightening or compressing them, by the addition of any other assisting cause here following; such as sudden and intense coldness introduced or applied from the air, drinks, bathing or swimming, after the liver or abdomen have been much heated; thirst long endured under great exercise, with sweats, and in the heats of summer; an ardent fever continued under fasting, or without drinks; great passions or disturbances of the mind; violent commotions excited by vomitives; hypochondriacal affections of long standing.

Concerning the general causes of inflammation, we have already treated under the numbers cited in the present aphorism, from whence it is sufficiently apparent, those causes may also take place in the liver. But there are still some causes remaining to be examined, which are more peculiar to the organ we now consider.

An exorbitant fatness of the omentum.] The omentum, which in abortives and new born infants exceeds the thinnest sarfinet or silk, while it includes no fat in its folds or plaits, which has also the same very fine texture in adults, but lean persons, is nevertheless able to grow to an immense bulk with fat, in those who are inclined to be corpulent; for the greater part of the bulk of the protuberant belly in such persons, proceeds from the fat of the omentum. We see that in fatned oxen, sometimes the cawl amounts to near an hundred weight, which yet leaves
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only a few ounces of thin skins, when all the fat is melted and pressed out from it. But such a bulk of omentum may be very prejudicial by compressing all the adjacent viscera; and the danger will be still greater, when the mass of stagnant fat here collected, becomes liquified by a fever, or by great exercise, so as to be returned from the cells of the omentum into the circulation.

For that violent exercise of body and acute febrile diseases, put the stagnant fat into motion and discharge it from the body, we are taught by the most undoubted and daily observations. But the omentum has no excretory vessel, and therefore all the fat liquified and transfused by disease or great exercise, must pass directly thro' the epiploic veins into the vena portarum, whereby the whole secretory fabrick of the liver will be suddenly over-charged with an inundation of oily fat, which being extremely sluggish and difficult of passage thro' the final straits of the least vessels, may give birth to an arrestment or obstruction of the worst consequence; more especially in this inert viscus, which first receives the effects of the said oily plethora. See what was said of this matter at §. 693. where we treated on relieving the febrile heat by lessening the mass of the juices to be moved.

An atrabiliary or gross blood, with a bilious constitution.] Such a state of the juices, which we shall hereafter consider more at large in a chapter on melancholy, is said to be present when the most moveable parts having been dissipated from the whole mass of blood, the remaining more dense or earthy parts uniting more intimately with the thick and oily parts, give the blood a kind of resinous or pitch-like tenacity, by which it becomes strongly inclined to adhere and clog within the straits of the vessels. We shall also hereafter shew (at §. 1098.) that the vessels of the hypochondriacal viscera, and such as concur to the business of chylication, are more especially infested
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and disturbed by this atrabiliary matter. But all the blood from those viscera returns into the vena portarum, and must by that pass thro' the liver; and therefore, if the atrabiliary viscid matter, arrested in the vessels of the chylopoietic viscera, becomes resolved and put in motion, the matter will be first caught in, and exert its injury upon the liver. Such a cause of an hepatitis is pointed out by *Hippocrates*^f where he says; *Hic morbus oritur ab atra bile, quando ad hepar confluerit.* "This malady arises from atrabilis, when that flows to the liver." And he informs us, that sometimes this disease is so mischievous as to kill suddenly: namely, when the atrabiliary tenacity has acquired also a considerable degree of corroding acrimony, by which it soon destroys all before it.

Acrimony from any humour or matter, purulent, &c.] Where we treated on a peripneumony it was remarked, that it is sometimes cured by a critical deposition of purulent matter upon other parts of the body, and that the said matter has a two-fold tendency, either to the upper or to the lower parts of the body. But when it tends to the lower parts, in that case *Hippocrates* observes (see §. 839.) that the signs of a slight inflammation appear in the hypochondrium, while this acrid matter meets a more difficult passage thro' the streights of the vena portarum. But moreover, this matter being purulent, and collected to a considerable quantity, afterwards causes a vomica or abscess of the liver, (see § 841.) There are also many other observations which have taught us, that the matter which flows from the wounds, left after amputating a breast, or the operation for a large aneurism, &c. has been so abundant, that the patient would have been thereby wasted as in a consumption, if the dressings were often renewed by the surgeon; but on the other hand, when

^f De internis Affectionibus Cap. xxix. Charter. Tom. VII. pag. 659.

when the collected matter has been too long retained upon the surface of such wounds, being absorbed and deposited upon the liver, it has therein formed purulent abscesses. *Hollerius*^g tells us, that he twice or thrice observed intolerable pains of the calves of the legs in a fever, which pains would receive no ease by any remedies: but after death, upon opening the legs with a scalpel, there was found a smooth or uniform and white matter, equally diffused through the cellular membrane; and the liver was also found to contain purulent vomica's or abscesses. *Hollerius* indeed believed, that this matter was instead of blood conveyed from the liver to the calves of the legs; because agreeable to the opinion of that day he judged the liver to be the principal organ of sanguification; but the history of the distemper plainly shews, that the matter being formed in the legs was absorbed, and translated thence to the liver. In *Schenk*^h you have this and several other observations of the like kind. From the same causes, it is evident, an ichorous or serous matter may be deposited in the liver, as the effect commonly of a putrid or degenerated matter. Moreover in the scurvy, in which distemper, the blood so far degenerates, as to become offensively thick and acrid at the same time (see §. 1153.) the liver has been also found frequently ulcerated or corrodedⁱ.

But the causes before alledged are more especially mischievous when the motion of the blood and juices becomes suddenly increased, either by sultry heat of the air, violent exercise of body, or by a fever; whence a greater disposition to putrefaction is known to follow. The same is also true if the circulation of the humours be suddenly increased either by aliments or medicines, see §. 99. For this reason

^g Holler. in Coac. Hippocrat. pag. 348.

411.

&c.

ⁱ Academ. des sciences l'annee 1699

^h Lib. III. pag.

mem. pag. 240.

reason *Hippocrates*^k assures us, that an hepatitis arises from atrabilis collected in the liver, chiefly in the autumn, or at the changes of the seasons of the year; about which times, fevers are usually epidemical and spreading. And a little after he says^l, another kind of hepatitis arises from bile chiefly in the summer-time after drunkenness and devouring of beef.

Poison, &c.] There are many poisons which suddenly fuse or dissolve the humours, and also move them very violently. Such are the strongest metal-line preparations; as for example, the corrosive sublimate of mercury, the crystals of silver, &c. these may suddenly dissolve the atrabiliary matter collected in the vessels of the abdominal viscera, and drive the same into the narrowest vessels of the liver, so as to produce an hepatitis. But there are still others whose manner of acting we do not so well understand, although they suddenly disturb the functions of the liver. Thus *Galen*^m observed, a servant to the emperor, who used to catch vipers, by a bite from that animal had his whole body changed to the green colour of leeks. *Lanzoni*ⁿ observed a person bit in the right-hand by a domestic cat, from whence the hand was invaded with great pain and swelling; but when these went off, a yellow-jaundice ensued that lasted forty days: and a like obstinate jaundice he observed in a person who had been bit in the leg by a dog. The most certain observations teach us, that some poisons, by a wonderful property, not intelligible from any structure of bodies hitherto known, affect only some particular parts of the human system; as for example, the roots of henbane eaten disturb the functions of the brain, cantharides taken inwardly those of the urinary passages, &c. and perhaps from the venomous bites of certain animals, such a virus enters

^k De Internis Affectionibus Cap. xxix. Charter. Tom. VII. pag. 659. ^l Ibidem Cap. xxx. pag. 660. ^m De locis affectis Lib. V. Cap. viii. Charter. Tom. VII. pag. 498. ⁿ Novis Actis Phys. med. observat. 96. Tom. I. pag. 174.

enters the body as disturbs the functions of the liver rather than those of other parts.

A bile that is fat, acrid, adust, &c.] The bile being the most acrid of any humour that inhabits the body, when it inclines to putrefaction, it may kindle the most acute fevers, as we declared before at §. 586, where we treated on the causes of fevers: but this is more especially true of the cystic bile, which is retarded in its discharge, and apt to be accumulated both from the natural situation of the gall-bladder, and from the narrowness and crooked course of its duct. But whenever this bile, rendered more acrimonious by standing, inclines to a putrefaction by a sultry hot air, or violent motion of body, it may then do great mischief to the contiguous liver, with which near half of the gall-bladder coheres; for we see, in dead bodies, that the corrupted bile filters or transfuses, as it were, thro' its gall-bladder, so as to tinge all the circumjacent parts with its own yellow colour. But this bile has still a more easy passage into the liver, since we are shewn by anatomical experiments, that the cavity of the gall-bladder communicates by an open and free course or duct that goes into the body of the liver itself. From hence frequently in the autumn, after very sultry heats, bilious fevers arise, that are often accompanied with an hepatitis, or inflammation of the liver.

But since every thing is justly ranked among the causes of inflammation (§. 375.) which by some compressure may be able to diminish or occlude the extremities of the vessels, and hinder the free course of the humours through them, therefore a consideration of those causes will deserve our attention, since the truth of their existence is often shewn to us by the opening of bodies deceased.

A stone.] That stony concretions are found almost in all parts of the body, will be shewn hereafter in the particular chapter where we are to treat upon the stone;

stone; but in the mean time it is certain, that those concretions are no where oftener found than in the liver and gall-bladder, and in the passages which are destined to the separation, retention, and expulsion of the urine. The observations that teach us this truth are numberless, and therefore we shall only recount a few of the best credit. *Columbus*^p assures us he has found stones in the liver; and that in the body of St Ignatius he found stones in the vena portarum: but in the gall bladder and large biliary ducts [pori biliarii] they very frequently occur; and *Ruyfch*^q testifies that sometimes they are even met with in the substance of the liver itself, but rarely; for though he had above an hundred times excarnated the vascular compages of the liver, he only once found a hard stone hid in its parenchyma, weighing two scruples, and without any attachment to the biliary pore or duct.

A chalkey matter.] Sometimes there are concretions of the like sort found in this organ, but of a more friable texture, and of a whiter appearance, like gypsum or plaster-of-paris. Such incrustations were often observed by *Glisson*^r in the pori biliarii, and its larger branches dispersed through the livers of oxen that had been fed in stalls with hay and straw during the winter season, and without exercise. But when these concretions are very friable; and they afterwards dissolve again, and pass out of the body, when the cattle come to feed upon the fresh grass of the meadows; for in the oxen that are slain in the spring and summer, they are very rarely to be found. But we also read of the like chalkey matter found in the human liver^s.

A schirrhous or callus.] Frequently I have myself seen in the bodies of persons who have languished under diseases, and the same may be read in the acta

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^p Lib. XV. p. 266.^q Observat. Anatom. 24. pag. 25.^r Oper. vol. 2. Anat. hepat. Cap. vii. pag. 104. *Ruyfch. Obs.*^s Nova acta phys. med. Tom. II. Observ.

8. part 417.

eruditorum physico-medica, that the whole liver has appeared covered with a very strong and thick coat, which made a noise in the cutting of it, almost like leather or parchment: and the whole remaining flesh of the liver was very tough and resisting, in part whitish, and in part grey or ash-coloured.

A steatoma.] What a steatoma properly is, was declared before at §. 112, N^o. 1. A tumour of this kind was observed by *Columbus*^t; and *Glisson*^u relates, that in the body of a man who had for many years been troubled with strumous swellings in the neck, the liver was found both inwardly and outwardly full of numberless glandules or knots, of the size of peas and beans: upon cutting through the middle, these knots discharged no humour, but seemed to be made up of gelly and plaster, or mortar and by these the bulk of the liver was not only enlarged, but also it had double the usual weight. But *Glisson*^w himself saw a steatoma or tumour of this kind that was still much larger, weighing near six ounces and fixed in the gibbous part of the liver toward the back part of the diaphragm.

Apostem or abscess.] Altho' the term apostem or abscess is commonly understood to mean the change of an inflammation to a suppuration, or the collection of matter that thence follows in any part of the body; yet the term apostem is sometimes used in a sense still more general: for thus *Galen*^x, in a passage we before cited from him (see §. 402.) calls in general those disorders, in which parts that were before contiguous, recede from each other so as to leave an intermediate space that may hold humour or matters of divers kinds. But when a purulent abscess is formed in this viscus after a previous inflammation, then such an apostem is the effect, and not the cause of an hepatitis; but yet by compressing

^t Lib. XV. pag. 265.

^u Oper. vol. 2. Anat. hepa. Ca.

viii. pag. 113.

^w Ibidem pag. 114.

^x Method. meden.

ad Glauc. Lib. II. Cap. 1x. Charter. Tom. X. pag. 382.

the adjacent parts, it may produce a new inflammation. But medical observations teach us, that there are sometimes wonderful apostems found in the liver in which was no pus or matter, but a very different substance. Such a bag-full of a gelatinous matter, to the weight of several pounds, was found in the gibbous part of the liver of a deceased person that *Bianchi* ^y opened; and this great swelling had at last tore open the diaphragm, and poured out a great quantity of its collected matter into the right capacity of the thorax, which finally suffocated the miserable patient. He likewise observed, in a girl who expired of a lingering fever, that the whole substance of the liver contained a great number of a lesser sort of swellings, which contained a matter like the white of an egg hardened by the fire^z. In the body of a man suffocated by the fumes of coals, no other fault appeared in the viscera but a large globular swelling at the bottom of the gall-bladder, one hemisphere of which grew into the substance of the liver; the tumour itself, fixed to a steel-yard, was found to weigh above a pound, and was outwardly covered with a very thick skin: but within the cavity of this tumour were contained above nine thousand little compressed bladders, like those of white grapes as to colour and figure, but of divers magnitudes: and what was here the most wonderful, they neither cohered to each other, nor to the bag in which they were all included^a. The celebrated *Littre* ^b found in the larger lobe of the liver, an ample cavity that contained bodies of an oval figure full of a viscid liquor, and as pellucid as water.

[A cancer.] Namely, one from a schirrhous preceding, which in this case offends not only by its bulk and pressure, like a schirrhous, upon the circumjacent parts, but also corrodes every thing with its most

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^y Hist. hepat. part. 2. Cap. V. Tom. II. pag. 154. ^z Ibid.
^a Academ. Scient. Petropolit. Tom. I. p. 379. ^b Academ. des Sciences l'an 1704. Hist. pag. 38.

sharp, acrimonious ichor; of which see more at §. 492, & seq.

A worm.] We shall hereafter be more particular upon this head, when in treating upon the diseases of infants, we shall consider worms that are found within the human body, and which are the most frequently observed in those of tender years. It will there appear, that almost all parts of the body have been found the seat of worms; but more especially the stomach and intestines. It may suffice for us in this place, to take notice that among the rest, the practical observations of physicians shew, that in the liver^c likewise worms have been found. *Ruyfch* dissecting a mouse, found in the hollow side of the liver, a little pendulous bladder, upon opening which he drew out a very slender worm of above a span in length; [“and I, who translate this, once found
“the same, but of a greater length, rolled up in a
“round vesicle, like a small grape. This appeared
“to be blood-less, and was composed of contractile
“ring-lets, like those of an earth-worm.”] But in the livers of oxen, calves and sheep, he often found the ducts of the liver that convey the bile, stuffed with a kind of tartarous matter, impeding the course of the bile to the intestines, whereby the biliary pores or ducts appeared much distended or enlarged; and under these circumstances, he often found in them sort of lively little worms [shaped like flounders, and commonly called flocks] about the size and figure of those which from their resemblance to gourd-seeds are called cucurbitini^d. But *Nebelius*^e in the body of a military person, found a long worm both in the cystic, and in the hepatic duct, with a number of the same sort in the intestines; whence he reasonably conjectured, that those two worms had made their way from the duodenum, thro’ the common biliary duct

^c Observat. Anat. IX. pag. 17.

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^d Ibid. pag. 23. Observ.

^e Nov. acta Physico med. Tom. V. Observ. CX

into the cystic and the hepatic duct. Perhaps there may be also other passages, by which worms may get into the liver. For *Ruyfch*^f, in examining the mesentery of an horse, found a part of the mesenterical artery very much dilated, and upon opening it he saw numberless small worms, about the size of very fine needles. But it may be not absurd to believe, that such vermiculi, when they had a much smaller bulk, might pass along from the mesenterical arteries to the veins of the same name, and go by them into the liver.

But all these above specified causes, calculi, plaster, or tartar, &c. found in the liver, by compressing the contiguous parts may hinder, and disturb the free course of the blood thro' the vena portarum and liver, and even put a stop to the free expulsion of the bile, that is already separated. But an obstruction being thus formed, if there now follows a cause exciting a greater motion of the circulation, an inflammation will here ensue (see §. 371.) or an hepatitis will be thus produced. In the next place it is our business to consider the principal causes by which the blood, to be moved thro' the vena portarum, becomes indisposed to pass freely, in the ultimate small extremities of that vessel within the liver.

A sudden and intense coldness introduced or applied by the air, drinks, &c.] When we treated upon obstruction it was shewn (see §. 117.) that cold so clots or conjoins the particles of the blood one to another, as to render them unfit to pass freely through the final extremities of the vessels; and it also appeared at §. 118. that the greatest danger of a future and sudden obstruction from this cause, is when such a great and sudden coldness comes upon the body of a person, whose vessels and juices have been before much rarified and dilated by heat. If now we consider, that a great portion of the liver lies incumbent on the stomach, the greatness of the danger will

^f Observat. Anat. VI. pag. 16.

readily appear, to which those imprudent persons expose themselves, who after being heated with exercise, fill their stomach suddenly with large draughts of cold liquors; but more especially, when they drink such as have a greater coldness given to them by ice. The like danger is also threatened from bathing or swimming in cold water, after the body has been heated to a sweat by labour or exercise. It is well known from anatomy, that the fore part of the liver which covers over the stomach, lies nakedly contiguous to the peritonæum, and may be therefore in that place very easily affected by external cold. I have myself sometimes seen both an inflammation of the liver, and a very stubborn jaundice from this cause. See what was said upon the like causes in a pleurisy at §. 881. From hence *Aretæus*^s appears to have very justly ranked sudden cooling of the body among the causes of an hepatitis.

Thirst long endured, &c.] For thus the most liquid parts of our humours are evaporated or carried off by the air, while there are no recruits made of the diluent vehicle to the blood, whose particles therefore unite or grow more cohesive one to the other, so as to be unable to pass freely thro' the final extremities of the converging vessels (see §. 117.). But from this cause, the worst maladies may arise in all parts of the body, but more especially in the liver; in which the blood is obliged to flow from the veins, thro' arterial streights, without having received any fresh force from the heart and lungs. If now, from the whole tract of the stomach and intestines, over-dried for want of drink, there be none of the usual moisture absorbed into the meseraical small veins, the venal blood of the abdominal viscera will return too thick before it is driven by the vena portarum thro' the liver, in the final streights of whose least vessels it will be therefore apt to stick and hesitate. But the other venal blood, before it enters the right side of
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^s De causis & signis morbor. acutor. Lib. II. Cap. vii. p. 19.

the heart, is first diluted with all the lymph collected throughout the cellular fabric of the whole body, and is then attenuated by passing the pulmonary artery with a very considerable muscular force from the heart. But as both those helps are wanting, towards promoting the course of the blood thro' the liver, it readily appears, that we have much reason to fear obstructions in this gland, from an impervious hesitation in its stuffed-up vessels.

An ardent fever, &c.] How great a dryness arises throughout the whole body, in persons who lie ill of ardent fevers, was shewn before at §. 738. and the following. But then in those fevers there is usually great thirst; for all the causes of thirst (§. 636.) are present to a very great degree in this fever. It was before remarked (at §. 739.) that sometimes, when all the functions of the brain are disturbed in this fever, the sense of thirst shall of a sudden be effaced, altho' the causes which excited it still remain, or are even continually increasing. It was also formerly a custom to treat the patients, in these most ardent maladies, with hot medicines, and little or no allowance of drinks: but from thence, one may plainly perceive, how easily an hepatitis or inflammation of the liver might ensue, after the manner above specified. The wise ancients learned, by a diligent attention to diseases, that the liver became often affected from these causes, in the worst maladies: and they usually enquired into the conditions of the hypochondria in such cases, more especially, that of the right side, to know if there was any pain, swelling, or the like; and from thence, they drew very handsome presages concerning the various events and endings of the maladies, either into health, death, or other diseases. Consult what has been said upon a tightness of the hypochondrium in a continual putrid fever, in the commentaries to §. 735.

Great passions or disturbances of the mind.] Concerning the wonderful effects of violent disturbances

in the mind, we treated at §. 104. and it there appeared, that all and every single function of the body might be disturbed after a surprising manner, only by a change of the thoughts or ideas. But violent effects of this kind more especially follow from sudden fear or great grief. For we see, that in these violent affections of the mind, all the vessels of the body are very suddenly cramped or constricted, upon which a sense of anguish or oppression and weight is directly perceived about the heart and breast, from the hindrance that then follows to the free course of the blood and humours thro' the vessels: and that polypose concretions of the blood, inflammations, or sudden putrefactions are thence to be feared, was shewn before at §. 632. Moreover, it will hereafter be made to appear (§. 1093.) that violent commotions of the mind, produce an atrabiliary temperature of the humours, which was lately in the present aphorism reckoned amongst the causes of an hepatitis. *Hippocrates*^h has also remarked the like cause of an hepatitis, when he tells us, it most frequently happens “in travelling thro' desert countries, or when
“a fright seizes upon a person from having seen a
“spectre or ghost.” *In perigrinatione per deserta loca, & ubi terror ex viso spectro corripuerit.*

Violent commotions excited by vomitives.] When we treated upon a febrile vomiting (§. 652.) it was declared, that this vomiting happens when the diaphragm is suddenly and strongly contracted downwards, while at the same time the muscles of the abdomen also contract and compress all the contents of that venter, by which means, the stomach is in a manner powerfully urged, as if betwixt the sides of a press. While this happens, the motion of the venal blood, in the abdominal viscera, is consequently accelerated; and will therefore pass with a greater impetus thro' the vena portarum into the liver. If now the vessels in the liver are pervious, and the blood

^h De Affectionibus Cap. I. Charter. Tom. VII. pag 674.

blood passable, we have no great damage to expect from this accelerated motion; but if a gross atrabiliary matter be by the shocks of vomiting, urged suddenly upon the liver, or that tender gland itself be previously weakened by some chronical diseases, we have then often great mischiefs to apprehend from such a quick motion of the blood through the vena portarum. Under these circumstances, a fatal hypercatharsis, or over-purging, has been often observed, after the use of vomitives; and sometimes discharges of blood have ensued both upward and downward, as we intimated before upon another occasion, at §. 656.

Hypochondriacal maladies of long standing.] When the more fluxile parts of our humours have from any cause been exhausted from the whole mass of the blood, the more gross, and less fluxile parts cohere closer to each other, and produce that ill state of the blood which we call atrabiliary: but when this gross atrabiliary matter is collected in the abdominal viscera, while the same causes still continue to operate which first induced the cacochymia; the distemper is in that case termed the hip, or hypochondriac malady (see §. 1098.); and, therefore, what has been before advanced under the present aphorism will easily shew the reason why an inveterate malady of this kind may be the cause of an hepatitis; namely, whenever another cause shall accede to dissolve this atrabiliary matter, and move it into the liver.

But there is still another kind of this hypochondriacal malady observed by physicians, and called by a resembling name, although it be quite of a different nature: for a great many women, and even some men, who lead an unactive life, and look pallid with much study and reading of books, have their whole nervous system so very moveable or irritable, that even from slight passions of the mind they are troubled with great oppressions, convulsive motions, pains, and the like; see the comment to §. 633. Such men

men have been usually termed hypochondriacal, as the women have been denominated hysterical, from the same malady; which in them has been wrongly ascribed to the womb, because they are often worst afflicted with it at the times of their menstruation, and going with child. But when this malady arises only from too great a tenderness, or irritability of the nerves, causing inordinate distributions of the spirits, it is then usually termed by physicians the *hypochondriacal malady without an offending matter*; because when the hysterical fits, or tumults are once quelled by suitable remedies, there are no remaining signs left of the malady, as affecting any particular organ; but *Sydenham*, who is the best writer upon this distemper, informs us, that no sign more surely discovers, and points out this malady, from the many other distempers to which its numerous symptoms have a resemblance, than the very copious flux of most thin and limpid, or watery urine: therefore when such an hysterical diabetes has continued some time, exhausting the thinner parts of the humours, it may at length produce that kind of the hypochondriacal malady, which is deservedly ascribed to an atrabiliary thickness of the blood.

S E C T. DCCCCXVII.

WHEN an inflammation of the liver has once arisen from the divers causes, which appear thus numerous (§. 916.), it will have various effects according to the different state, or antecedent disposition of the liver itself, with the diversity of the inflammatory matter that is moved to it; and lastly, according to the diversity of the moving cause, which excites the said matter.

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That we may be able, by the rules of art, to determine in this malady what good events we may hope for, and what evils we may fear; a regard must be had principally to the following particulars.

According to the different dispositions of the liver, &c.] For if the liver was before schirrhous, or stuffed with stony concretions, one may easily understand that the hepatitis will be more difficult to cure, than if there had been no such disorder pre-existing; but we foresee consequences still worse if the substance of the liver has been already corrupted by a malignant, or cancerous ulcer.

According to the diversity of the matter, &c.] For example, the fat of the omentum being suddenly dissolved, and moved to the liver, may cause the worst inflammations; but if an atrabiliary matter, which has already assumed a state of acrimony, be driven to the liver, so as to prove the cause of an hepatitis, there must be evidently no hopes left.

According to the diversity of the moving causes.] For thus, if the inflammation lies in the ends of the hepatic arteries, the inflammatory symptoms and effects will result sooner, as from the arterial blood, and the stronger impulse from the heart, upon the obstructed capillaries; but the effects will come more slowly if the same malady lies in converging extremities of the vena portarum, through which the blood has a slower course, as we before declared at §. 915. At the same time it is also easily apparent, that if the hepatitis be joined with a very violent fever, there will be proportionable reason to fear the most fatal events; since to resolve an inflammation requires a sedate motion of the humours (see §. 386.); and since every other ending of an inflammation in the liver is so extremely dangerous.

S E C T. DCCCCXVIII.

BUT when the common nature, or essence, of an inflammation, has once taken place in the liver, it obstructs the small vessels, stops the current fluids, and elevates the solids into a swelling or tumour, compresses the parts adjacent, and introduces in them the like effects as in its own proper seat; from thence the inflammation gradually spreads, or increases till it has almost occupied the whole liver; it also compresses or hinders the dilatation of the stomach, and when that is itself filled, it again causes a painfulness of the liver, as well as of the diaphragm. The hepatitis thus formed, hinders the course of all the arterial blood passing through the cœliac, and through the two mesenterical arteries, by stopping up its way through the liver; and consequently it occasions an entire arrestment of all the venal, arterial, and lymphatic juices, flowing within the viscera, those of the abdomen more especially; it perverts the formation, separation, excretion, and the usual return or circulation of the bile, with its action in the duodenum; and, therefore, occasions in the body a jaundice, with all its effects; and particularly it melts all the humours, and even the abdominal viscera, into a state of putrefaction, from whence an infinite number of maladies follow.

We have here enumerated the effects which flow from an inflammation of the liver as the cause; which effects being observed afford us also the diagnostic signs of an hepatitis then present: but in what manner

ner these effects flow, or arise from the cause, we have before explained in our history of inflammation, §. 382: and from thence one may easily conceive that the small vessels stuffed and swelled with imperious juices, will compress and streighten such others as are near or contiguous to them; by which means the inflammation, at first confined to a small part only of the liver, may soon be spread throughout that large viscus; namely, whenever the causes, productive of the distemper, either increase, or still continue their first operation.

But as a large portion of the liver lies incumbent upon the stomach, it must of course hinder the dilatation of that receptacle of our nourishment, whenever it is enlarged or swelled by violent inflammation; as on the other hand the liver itself will be also compressed by the stomach when distended with food, so as to occasion an increase of all the complaints: and the same also holds true of the diaphragm, which lies contiguous to the convex part of the liver. From hence *Galen*, in a passage cited from him at §. 915, reckons a lost appetite, sickness, and vomiting, among the signs of an hepatitis, whenever the inflammation lies in the hollow part of the liver next the stomach; but if the seat of the inflammation be in the gibbous part of the liver, then there will be a greater pain in breathing, that shoots up sometimes as high as the throat, and is joined with a cough; the false ribs likewise being thrust outward into a swelling, become painful, and in lean persons are by the inflammatory turgescence of the tumour urged into a protuberance, conformable to that of the liver itself.

But it will be easily perceived that all these signs are only present when the whole body of the liver, or at least the greater part of it, is possessed by the inflammation; for a small or slight phlegmon of this large gland will not be attended with so many symptoms, because they principally arise from the actions
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of the circumjacent parts impeded by the swelled liver; for numerous observations seem to teach us, that the liver in its own substance is not susceptible of any pain that is very acute; and sometimes I have known an abscess found in the liver of persons deceased, when they have not before complained of any pain about the affected part during the whole course of their malady, in which they have felt only a sense of heaviness, or an oppressing weight. The same is also confirmed by the observations of *La Motte*ⁱ, more particularly in a person whose abscess in the right hypochondrium had laid bare the liver, so as to expose to the view as much of it as was equal to a hand's-breadth, which became afterwards thereby ulcerated; for whenever he designedly handled the liver with his fingers, or with chirurgical instruments, the patient felt nothing of it.

Hinders all the arterial blood of the coeliac, &c.] It appears from anatomy, that the stomach, pancreas, and spleen, receive their arteries from the coeliac, while the mesentery and intestines are supplied by the two mesenterical arteries, namely, the upper and the lower. 'Tis also known that all the blood brought by these arteries, is from them derived into one vein called vena portarum, by which it is afterwards moved or distributed throughout the liver; excepting from hence perhaps only a small number of branches, described by the celebrated *Ruyfch*^k in his last works, as serving to the nutrition of these parts, and conveying their blood directly to the cava, without entering thro' the liver. Therefore whenever a violent inflammation has occupied the liver, the course of the blood through it by the vena portarum, is thereby suppressed or impeded; whence the venal blood of the other abdominal viscera will not be able to enter the vena portarum, that is now itself over-full or distended: and thence again the blood

ⁱ Traité de Chirurgie, Tom. I. pag. 318—329.
Boerh Institut. §. 336.

^k Herm.

blood from the final arteries will not be able to gain a passage into or through their corresponding veins, that are already over-filled. 'Tis therefore evident, that the circulation of all the humours through the abdominal viscera, will be hindered when the liver is stuffed up with impervious blood, and consequently there will be great danger lest the over-distended vessels may be broken, or lest a sudden gangrene may follow (§. 419.) from the intercepted flux of vital humours through the arteries, to be returned by the veins. Under these circumstances then there will be often intolerable oppressions or anxieties, and troublesome pains in various parts of the abdomen, but more especially about the heart, as we observed before upon another occasion, §. 632; and now a violent vomiting will often attend, by which these patients are sometimes relieved; for it seems that the venal blood, by a retrograde course, may be urged from the distended veins back again through the arteries, by the violent concussions and pressures of the abdominal viscera from the respirative muscles in the time of vomiting; and this may be done whenever the resistance of the opening of the final arteries is greater than the force driving the blood from the basis to the apex of the artery, as we said before in treating upon the cure of obstructions, at §. 141, No. 1. for 'tis observable there are no valves in the mesenterical veins; and the periodical or temporary jaundice, that often follows these violent oppressions and fits of vomiting, shew that even the bile is by this force driven back from the liver again into the blood; and even injections of wax thrown into the vena portarum, have been seen to return thro' the hepatic arteries, as we but lately remarked, § 915. From hence we understand how, in chronical diseases, the whole liver being rendered schirrhous, and sometimes contracted like tripe or dry leather, as I have observed in opened bodies, the patient nevertheless

continues

continues to hold out even for a considerable time under a languid and unhealthy course of life.

The formation of the bile, &c.] For all these depend upon a free passage of the blood of the vena portarum through the liver: But according as the inflammatory tumour formed in this viscus shall compress different parts thereof, 'tis evident enough that the corresponding vessels will be compressed, which serve to separate and discharge the bile: but the circulation of the bile is also truly disturbed or perverted in this case, which seems to be in the following manner: The magnitude of the liver, and the great capacity of the biliary pores, with the quantity of blood carried to the liver for the secretion of the bile, seem to teach us that a very great proportion of this fluid is drained off by the liver, and poured from thence by an ample or common duct into the duodenum: but in a healthy person the fæces of the intestines are of a solid consistence; whence it follows, that almost the whole mass of the fluid secreted by the liver, and poured into the cavity of the intestines, is again discerned or drunk up by the absorbing veins, from the alimentary and fæcal contents, before they arrive to the anus.

But of these absorbing veins there are found two kinds in the intestines, namely, the lacteal vessels which lead to the thoracic duct; and the final or least extremities of the meseraical veins, that open into the cavity of the intestines. But since in the lacteal vessels and thoracic duct, there is found nothing of a bilious humour, there remains only one other course for the said absorbed humour to pass through, namely, the meseraical veins; and by these the hepatic bile, and perhaps a great part of the cystic bile, is again sent, with the blood of the vena portarum, into the liver; that thus by a repeated circulation, it may be again returned more efficacious for the several purposes to which it is designed. But then, that this may be effected, it is equally plain

plain that there is required a free course for the humours to pass through the final extremities of the vena portarum in the liver.

Therefore occasions a jaundice, with all its effects] *Galen*¹ has thus defined this malady; *Icterus est bilis refusio in cutem, quo fit, ut superficies tingatur & lutea fiat, & vitietur cutis, & albae illis fiant ventris dejectiones.* “A jaundice is the bile refunded upon the skin, from whence the surface of the body appears “tinctured with a yellow colour, and the skin itself “is vitiated by it, while the afflicted have white- “coloured stools.” Namely, when the bile, not having its usual exit into the intestines, returns back from the liver into the blood, and with that spreads itself throughout the whole body. But since the hepatic bile differs in colour from that of the cystic, and both of them often put on a different colour from that which is natural to them; from thence there will be a variety of the colours of ictericous people. Sometimes they are pallid, or of a yellowish-green colour; sometimes they are of a deep yellow, or saffron-colour; and sometimes of a deep green, inclined almost to a black. Yet physicians have generally distinguished but two kinds of the jaundice, namely the black and the yellow; altho’ there be in reality a great diversity or number of colours betwixt the slightest yellow-jaundice, and that which descends almost to a black, as *Aretæus*^m hath well remarked. But since the white parts of the eyes are tinged of a yellow-colour in this malady, they generally afford the first sign of a jaundice; and from hence the Greeks have derived the name of this distemper, (*ικτέρος*, *icterus*) from *ικτίς*, a kind of ferret or weazle of the woods, that has eyes tinctured of the same colour. But *Suidas* will have it rather derived (*ἀπὸ τῶν ἰκτίγων*) from kites, because the eyes

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¹ Definit. Medic. No. 276. Charter. Tom. II. pag. 264.

^m De causis & signis morbor. diuturno. Lib. I. Cap. xv. pag.

in those birds are observed of the same colour ⁿ. The Latins have called it *morbis regius*, because they believed the fare or luxury of a court to be in a manner almost necessary to its cure; *lecto etiam & conclavi cultiori, usu, loco, ludis, lascivia, aliis, per quae mens exbilletur: ob quae regius morbis dictus videtur* ^o; namely, “an indulgent elegance of bed and board, the fine situation, usages, sports, lascivious and other entertainments, by which the mind is rendered chearful: on which account the malady seems to have been called the royal disease.” They have also called it *morbis arcuatus*, from the variegation of the skin resembling the colours of the rainbow. Others have called it *aurigo*, from its golden or yellow colour.

But some may say, is it not doubtful whether an inflammation of the liver can produce a jaundice? The most certain observations have taught us, that every impediment which hinders the free discharge of the bile from the liver and gall bladder into the duodenum or intestine, may produce a jaundice. Thus, for example, in new-born infants a jaundice is often observed from the glutinous clogging humours collected in, and sticking to the sides of the intestine; but that jaundice is easily cured by expelling the congested humours with a slight purgative. I have observed in some women a jaundice during the time of the pregnancy, although they were not troubled with that distemper either before or after their child-bearing. And possibly this might be effected by the enlargement of the womb, compressing the abdominal viscera, and displacing the intestines after a wonderful manner, from their ordinary situations; and sometimes they have voided most hard faeces of a very considerable bulk, by stools, for some days after their delivery; after which their yellow or icteritious colour has entirely vanished: from

ⁿ Petit. Comment. in Aret. ibid. pag. 187.
III. Cap. xxiv. pag. 176.

^o Cels. Lib.

from whence, I think, we may probably suppose the colon to have been distended by such accumulated fæces, in that part where it lies under the liver, so as to compress the cystic duct. If therefore an inflammatory swelling of the liver be formed in the same place, so as to compress the exit of the cystic duct, there is then no doubt but such an hepatitis or inflammation of the liver may produce a jaundice. But it is not so very apparent, that every hepatitis may be the cause of a jaundice, namely, inasmuch as it impedes the secretion of the bile by the stuffed-up extremities of the vena portarum; or if the adjacent secretory ducts are compressed by the same distended and inflamed vessels, that lie contiguous to the ducts which contain the bile already separated from the blood of the vena portarum. Certain we are, that the cystic bile differs both in colour and taste from the hepatic; and there are numberless arteries ramified throughout the gall-bladder with wonderful artifice, and in very peculiar distributions, as we are taught by anatomical injections: whence it seems not improbable, that they may be some way serviceable towards the preparation and secretion of this bitter fluid. Add to this, that naturally in the liver we observe neither bitterness nor a yellow colour; and therefore when a jaundice tinges the surface of the body of such a colour, it seems to follow that it must be from an impediment to the excretion of the cystic bile into the duodenum, whence it is driven back again into the blood^p. This opinion is confirmed by observations made in deceased bodies. Abscesses, even of a considerable bulk, have been found in the liver without any preceding jaundice; and other tumours have been found likewise, which by their bulk must have compressed a great many of the adjacent biliary ducts and vessels. On the other hand, when the bodies of those deceased of a jaundice have been opened, the causes have manifestly

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appeared;

^p Vide de his Medic. Essays, Tom. I. Artic. XXXIII. p. 395.

appeared, and been found such as hindered the discharge of the cystic bile into the duodenum; and among these the most frequent cause has been stony concretions, blocking up the excretory passages of the bile, of which we shall speak hereafter.

But in the mean time this deserves to be remarked, that the blood of the vena portarum contains in itself the matter for the immediate formation of the bile, which must be soon after separated from thence by the secretory ducts of the liver; so that if a large part of the final extremities of the vena portarum are stuffed with impervious humours, the secretion of the hepatic bile will be thence impeded, and that as yet unperfected bilious juice, which was about to assume the name of bile, will remain mixed with the blood, and be distributed therewith throughout the body; consequently this must induce a bilious cachymia of the blood, which thus retains a humour accumulated in itself, that ought not naturally to be there, or at least not in that abundance. When continual, or remitting fevers have been epidemical in the time of autumn, after very hot and dry summers practical observations have then shewn us, that the liver has been often affected, and stuffed with a thick blood, that has had almost an atrabiliary tenacity: now in such patients there has not indeed been observed the intense yellowness of a jaundice; but the face looks of a waxen complexion, exhibiting a paleness mixed with a small tincture of light yellow, as a sign of this distemper: from whence it is evident, that at least such a slight kind of the jaundice may follow from an inflammation of the liver as its cause; since even *Aretæus* (as we remarked a little before under the present aphorism) has informed us there may be innumerable varieties of colour, in different kinds of the jaundice. Moreover it is observed, that when the cystic bile begins to turn putrid, it easily transudes and penetrates through the adjacent parts; even when there is no obstacle to it in the cystic, or in the common

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common biliary duct; for thus in dead bodies we often see the bile soaks through the gall-bladder, into the adjacent colon, omentum, and peritonæum, and tingeth them with its own colour. When, therefore, the bile of the gall-bladder begins to be attenuated by the increased heat of the liver in an hepatitis or inflammation of it, thereby becoming disposed to putrefaction, it may easily penetrate into the adjacent liver itself into which the gall-bladder is fastened, and within whose substance there are apparently many open branches of vessels, communicating from one to the other.

But a jaundice being once formed from an hepatitis, or inflammation, it is consequently evident all its effects must follow; but of these effects we shall treat at §. 950, hereafter.

A putrefaction of all the humours and viscera, &c.] When the liver, stuffed up, denies a free passage for the blood to flow through its substance by the vena portarum, all the abdominal viscera, which evacuate their venal blood into the said portal vein, are disturbed in their respective actions, and a stagnation of their circulating juices is thus occasioned in them. Moreover the bile is of all the humours of the body the most inclined to putrefaction; and in dead bodies we observe that putrefaction commoly begins to shew itself first about the liver; but the blood of the vena portarum contains in it the immediate matter for forming the bile; and, therefore, it is evident how much reason we here have to fear a sudden corruption of its texture. The most putrid diarrhæas and dysenteries, that frequently accompany an hepatitis, confirm the same thing. See also what we have before advanced upon anguish from an hindrance of the blood's course thro' the vena portarum in the liver, at §. 632.

S E C T. DCCCCXIX.

AN hepatitis then terminates like an inflammation in the other viscera, either in health, in other diseases, or in death.

Here you may consult what has been said at §. 591.

S E C T. DCCCCXX.

IT ends in health either by the helps of nature, or of art.

See what has been said concerning this two fold way of cure, at §. 885, where we treated of a pleurisy curable by nature, or by art.

S E C T. DCCCCXXI.

BY nature the malady is carried off either by a mild resolution, or by a concoction and excretion of the matter of the distemper.

Here you may peruse what was said upon the cure of a pleurisy, at §. 886.

S E C T. DCCCCXXII.

THE distemper goes off naturally by resolution, if the matter of it be recent, of a mild disposition, and under the other conditions that were before mentioned (§. 386.); but art likewise promotes the cure, by diluting, resolving gently moving, or agitating the said matter, by the use of epithems, drinks, clysters, &c.

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What the necessary conditions are to qualify an inflammation to be cured by resolution, we before shewed more at large under §. 386. But here the greatest danger is to be feared from the acrimony of the humours to be moved through the liver; for the venal blood of the abdominal viscera may acquire a very great acrimony from mere stagnation only in such large vessels, as it appears in itself more inclined to putrefaction by the matter of the bile, which it contains, as we observed a little before. Again there will be danger from the atrabiliary matter dissolved and put in motion, which then always acquires acrimony, and sometimes produces an hepatitis (see §. 916.); and in such a case 'tis easily apparent there can be no hopes of a mild resolution.

But if there are no signs denoting the functions of the body to be much injured, if the anxiety be small, and violence of the fever moderate, we may reasonably hope for a mild resolution of the distemper, which may be procured by a fluidity of the thickened, or concreted humour, dissolved and rendered fluxile through the vessels. In this case then art only administers plenty of a diluent vehicle, with such medicines as thin the blood, without exciting a quicker circulation, and are able to dissolve the cohesive matter that begins to clog up the final straits of the hepatic blood-vessels; such are the fresh whey of milk, thin broths, in which have been boiled leaves of lettuce, borragé, bugloss, or the roots of vipers-grass, &c. to which add fresh expressed juices of ripe garden-fruits, pressed from them while crude, or after they have been dressed by fire, as the rob of currants, elder-berries, and the like, with sal-polychrest, nitre, tartar-vitriolate, &c. But such more particularly are to be chosen, as are the most averse to the putrefaction, which is here so much to be feared, and which are at the same time emollient in some degree, since a smooth unacid state of the humours is always necessary to a cure that is to be

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obtained

obtained by resolution (see §. 386.); slight frictions of the hypochondria, more especially of the right, will be also useful after the said diluents and resolvents have been first used; for thus the matter beginning to clog the vessels of the liver may be shook off, set at liberty from the obstructed vessels, and sent forward through them. An epithem prepared from ingredients of this sort, for such a purpose, may be seen (at §. 890. No. 2.) before. But clysters are also here equally recommended, because while they lie in the colon they impart the operation of an emollient foment to the liver; and because the resolving medicines this way injected, may be drank up by the absorbing veins, and pass immediately to the affected part of the liver itself, with their virtues entire, or but little altered. We very often meet with the signs of a slight hepatitis in autumnal fevers, in which there is rather an oppression than a pain about the præcordia, the face looks of a waxen colour, the urine is bilious, and sometimes a slight yellowness appears in the whites of the eyes, more especially to be distinguished in the outer angles, or sides of them; but by the method here prescribed, these fevers are commonly cured with success, while a neglect of them in the beginning, or the raising a great commotion by vomits, urging the unresolved matter more deeply into the straits of the impervious or clogged vessels, often occasions the most stubborn chronical distempers to be left after them.

S E C T. DCCCCXXIII.

BUT an hepatitis goes off by concoction and excretion, when in the disease itself, first known by its proper signs (§. 916, to 919.), there is, 1. a bilious flux of the bowels, intermixed with a little blood, before the fourth day; (2.) a copious discharge of an acrid and thick

thick urine, with a red or whitish sediment, continued for some days, and appearing prior to the fourth day: (3.) when a slight pain supervenes about the spleen before the signs of concoction: (4.) when a copious hæmorrhage follows from the right nostril: (5.) by sweats, laudable as to their matter, seat, time, continuance, and effects.

We before treated at §. 594, concerning this two-fold manner by which diseases terminate in health; namely, by such a resolution of the stagnant viscid, as will enable it to flow easily through the vessels, without further mischief, or else by a salutary concoction suppurative, with an excretion of the matter, after it has once been put in motion, or returned into the circulation, but cannot there remain without prejudice to the health of the body; whence a discharge thereof by some sensible excretion becomes necessary. In the acute febrile distempers that have been hitherto considered, we carefully enquired after the ways by which a faithful observation has taught us the concocted matter of the distemper may be happily thrown out of the body; all those particulars are then applicable to the present aphorism, and therefore ought here to be each of them duly regarded.

1.] It was before shewn, at §. 830, where we treated on the cure of a peripneumony in this manner, by concoction and excretion of the matter of the distemper, that the inflammatory or obstructing viscid lodged in the final straits of the lesser arteries, being once resolved and put in motion, formed a yellow spitting, and that sometimes the dilated extremities of the vessels pressed out a small portion of the red blood, which having entered the lesser pellucid lymphatics, passed at length through their dilated extremities, which afforded a free opening for it into the cavity of the wind-pipe. We also shewed that
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the same matter, expelled by stool, was usually termed bilious by *Hippocrates*, not for being properly in substance as the bile, but from its having the like yellow colour. All this then is here likewise true with respect to the liver, wherein the inflammatory matter being once resolved and rendered moveable, may then find a short and ready passage into the cavity of the duodenum, so as to be afterwards excluded by stool. And as the less skilful practitioners often are in fear of ruptured vessels, when they perceive the yellow spittings intermixed with bloody streaks in pleurisies and peripneumonies; so likewise, in the present case, they imagine a dysentery attends, because they see a bilious flux from the bowels with a small quantity of blood: but they should observe, that when the matter of the distemper is this way evacuated from the liver towards a cure, there are none of those violent gripings in the lower belly, nor any of that troublesome tenesmus, or fruitless inclination to stool, felt in the anus, which accompany a true dysentery. But 'tis easily apparent the matter of such a flux cannot always be discharged in its first or pure state, but that in passing through so long a tract of the intestine as from the duodenum to the anus, it may intermix with the other intestinal contents, in such a manner as to afford no distinct appearance. But in this case we know the flux to be of the kind here described, from the relief which such a discharge gives to the distemper; for such a relief is by *Hippocrates* laid down as a general sign in such spontaneous fluxes from the bowels, as we observed before at §. 830. No. 3. However, *Hippocrates* has also remarked, there may be such a flow of yellow and viscid matter from the bowels, intermixed with a little of the excrements, and yet be joined with some pain of the side and hypochondrium^q. But we know the term hypochondrium, when it is mentioned absolutely by *Hippocrates*, without further

^q Praediſt. Lib. II. No. 148. Charter. Tom. VIII. pag. 798.

further distinction, always denotes that of the right side. *Galen* has also applauded bilious discharges from the intestines in an hepatitis, as we have seen in a passage quoted from him at §. 915. But it is here said, that such a flux from the bowels ought to happen prior to the fourth day of the malady, because if the distemper has been of longer standing, there can be scarce any grounds to hope it will terminate in health, without inducing another disorder; or even, one may rather fear a future suppuration or abscess.

2.] As the inflammatory matter resolved in the liver, may commodiously pass into the intestines by the common hepatic duct, after it has first entered into the biliary pores or ducts; so, on the other hand, the same matter may pass from the obstructed ends of the vena portarum, into the vena cava; and after mixing with the circulating juices, it may be expelled from the body by various passages. But since by the laws of nature the urinary passages are those by which offensive matters are commonly exterminated from the habit, to which a retention of them must be mischievous, therefore the present offending matter may likewise escape by these ways. See what was said upon a salutary discharge of the matter of a distemper by urine, in the commentaries to §. 594, and to §. 830, in which last place we treated of the cure of a peripneumony by the like urines. *Galen* in a passage before quoted from him, observes, that copious discharges by urine may relieve an hepatitis; and *Trallian* * recommends the roots of smallage slightly boiled in oxymel, for an hepatitis, whenever the inflammation has begun to concoct or digest the matter; which, as he remarks, may be afterwards carried off by urine, so as to diminish the swelling.

3.] We know from physiology, that all the blood of the spleen passes by the splenic vein into the liver, and therefore 'tis very apparent, that the liver being
stuffed

* Lib. VIII. Cap. I. pag. 392.

stuffed up, the free course of the blood, through the spleen, will at length be hindered. But when the obstructions of the liver begin to relent, a free motion will be quickly restored to the blood through the spleen, in consequence of which the blood of the splenic arteries will be probably imported with a greater impetus, which for a short time may occasion some unaisiness of no long duration. Now it is evident enough, such a slight painfulness of the spleen does not help the distemper towards an expulsion of the morbid matter, only serves as a sign to shew that the stuffed vessels of the liver begin to be set at liberty; and therefore that we are then to expect a discharge of the matter now dissolved, and at liberty to flow out by the emunctories or excretions. At the same time it is also evident, that in this case only a slight painfulness about the spleen is to be reckoned a good sign, while as yet there are no appearances of suppuration; for in a violent hepatitis, and where a vomica or abscess has once formed itself in the liver, such a pain arises in the spleen, because the splenic vein is unable to deliver its blood into the vena portarum. Thus also we sometimes observe such a painfulness about the spleen when the liver has hardened into a schirrhus, and often in an obstinate jaundice. Moreover, as we shewed at §. 741, a tightness about the hypochondrium, either to the right or left, stands for a sign of a critical hæmorrhage about to come from the nose, of which we shall speak in the next paragraph.

4.] How much good may be done by an hæmorrhage from the nose in acute diseases that are curable, has been more than once declared before, and particularly at §. 741, where it was observed, that an ardent fever itself is sometimes thus terminated. Nor is this hæmorrhage only serviceable by lessening the quantity of the blood, as it seems very probable, since it is observed to give much more relief than any other evacuation of blood whatever, that is made
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by art. I have even frequently observed the blood discharged of a much blacker colour by these hæmorrhages in acute diseases, without having that florid appearance which is proper to arterial blood; and the flux has afforded the greatest relief. I lately observed this in a pleuritic youth, who after the fifth blood-letting scarce found any relief to his distemper; but by a copious flux of black blood from his nostrils, the fever immediately abated, with a considerable relief of all the symptoms. *Hippocrates*^s has also observed the like relief from such an hæmorrhage in a hard and painful swelling of the hypochondrium; his words are, *Accidit autem & his, in primo circuitu sanguinis e naribus profluvium, & plurimum confert.* “But it also happens to these patients, in the first stage of the malady, that a flux of blood comes from their nose, and gives them great relief.” And *Galen*^t likewise affirms, *omnes, quae in hypochondriis fiunt, calidas & acutas inflammationes hæmorrhagia narium judicari*; “that all hot and acute inflammations which are formed in the hypochondria, are terminated by a critical hæmorrhage from the nose.” But then he adds, that the blood must flow from the direct or corresponding side, namely, from the right nostril when the liver is affected, and from the left when the spleen or parts adjacent are disordered, which is an article only observed and confirmed by the ancient physicians, as we declared more particularly at §. 741; yet this rule is perhaps sometimes subject to exceptions. We read that the wife of *Heraclides**, afflicted with an acute fever, became icteritious on the third day of the malady; that on the fourth day a considerable flux of blood came from the *left* nostril, and on the seventh day the disease came to a complete crisis. ’Tis true, this woman had also a regular flux of her menses,

^s In Prognostic. Charter. Tom. VIII. pag. 613. ^t De
crisibus Lib. III. Cap. iv. ibid. 430. * Epidem. VII. Ægror.
134. Charter. Tom. IX. pag. 599.

menfes, and fweats all over her body, which were critical; for which reasons we cannot altogether afcribe the termination of this malady to the hæmorrhage from the left noſtril only: but then we know diſeaſes are often obſerved to end not by one diſcharge barely, but that ſeveral different evacuations critically cure diſeaſes, and particularly ſuch as are of the kind above-mentioned; for *Hippocrates*^u, in another place, cautions us, that ardent fevers are in ſome patients followed with a jaundice on the ſixth day, and that in ſuch a diſcharge of that matter by urine, or by a purging or flux of the bowels, or by a copious hæmorrhage, was found ſerviceable: and at the ſame time he remarks, that all three of theſe evacuations ſucceeded in the caſe of *Heraclides*, whoſe fever terminated critically on the twentieth day.

5.] Concerning ſweats that critically diſcharge the matter of the diſeaſe from the body after it has been ſubdued and rendered fluxile, we have before treated at §. 594, No. 2. where we conſidered all the particulars mentioned under this number of our preſent aphoriſm. *Galen*^w has obſerved, that the bile, returned back into the blood, has diſcharged itſelf by bitter ſweats from the body, in icteritious perſons whoſe liver has been ſtuffed up; and thick or clammy ſweat, tinging the linen of a yellow or ſaffron-colour, to the relief of a woman in a jaundice, was ſeen by *Chomel*^x, and the jaundice went off after the ſaid ſweat.

S E C T. DCCCCXXIV.

WHEN the former of theſe critical diſcharges (namely, a purging, §. 928, No. 1.) ſhews itſelf, immediately ſuch epithems, clyſters, fomentations, drinks, aliments, and medicines,

^u Epidem. I. textu 65. Charter. ibid. pag. 66. ^w De Sanitate tuenda Lib. IV. Cap. iv. Charter. Tom. VI. pag. 120.

^x Acad. des Scienc. l'an 1737. Hiſt. pag. 69.

medicines, are to be administered, as are able to dilute, resolve, absterge, circulate, and gently expel the matter by this outlet, and which are more especially of a disposition opposite to a bilious putrefaction.

Hippocrates has laid it down as a general rule in the cure of diseases (which we mentioned before at §. 605, No. 13.) *Quæ ducere oportet, ducenda sunt, quo maxime vergat natura, per loca conferentia.* "That when it is necessary for us to evacuate any matter or humours, they are to be discharged by the passages to which nature most inclines them, through parts that are of a suitable disposition." Therefore when the bowels begin to send forth a bilious flux, intermixed with a little blood, before the fourth day, it will be proper to promote that evacuation, not by strong purgatives that disturb the whole body, but by mild abstersives, which are able further to attenuate the matter of the distemper, render it fluxile, and promote, with a gentle stimulus, its expulsion by stool. Such are the fresh-made whey of new milk in the spring or summer-season, while the cattle cheerfully feed upon the green pasturage; for this makes one of the best remedies, whether it be given under the denomination of a drink or a medicine; but this will be rendered still more efficacious, if it be boiled with those herbs which are by botanists usually called planipetalous and lactescent, as cow-thistle, endive, succory, dandelion, and the roots of vipers-grass, &c. whose extraordinary virtues in solving a febrile viscid, we before commended at §. 614, and which are likewise advised for an inflammation of the liver by *Trallianus*. But since in the present case (by §. 918.) a sudden putrefaction is to be feared, therefore to obviate this evil, sub-acids or astringents are chosen; tamarinds, or the rob of elderberries,

berries, and of currants, with the syrup of citron juice, diluted in whey of milk, barley-water, oat-gruel, and the like, are therefore usually given here to advantage. Forms of this kind may be seen in the materia medica, at the number of the present aphorism. At the same time also epithems and fomentations are applied to the right hypochondrium, and to the whole abdomen, like those which we before recommended for the cure of a pleurisy, at §. 889-3. But clysters also prepared from the like, are injected often to wash out the large intestines, and with a design, that if they be long retained, a part of them may be drunk up by the mesenteric veins, and by them pass on directly to the liver, and prove useful by diluting, resolving, and absterging. Thus *Hippocrates*², in the cure of an *hepatitis*, commends a clyster of the decoction of beet-leaves mixed with honey and nitre, while internally he gave suppings prepared from barley with honey, and for drink honey with water and with vinegar, which relieve by the same virtues as those above-mentioned.

S E C T. DCCCCXXV.

BUT if the other condition, that inclines the matter to go off by urine (§. 923. No. 2. attends this malady, those helps are to be put in practice which were before directed (§. 889, and 888, No. 2.) and to these we may add such things as are a little deterfive.

Concerning the manner in which this excretion of the morbid matter is to be promoted, and carried through the kidneys, we before treated in the cure of a peripneumony, at §. 853, and of a pleurisy 880 No. 2. Those remedies we recommended in the preceding paragraphs, are here likewise useful, and

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² De internis Affection. Cap. 1. Charter. Tom. VII. p. 674.

most all of them; more especially if they are taken diluted in a large quantity of the whey of milk, to afford a plentiful vehicle for the urine; dandelion and the like plants which have a deterfive and diuretic force, will be likewise of use to the same end: for here we have no need of the sharper diuretics, only those of the milder sort.

S E C T. DCCCCXXVI.

IN the third case (§. 923, No. 3.) of a painfulness about the hypochondrium, the same course (924, 925.) is to be pursued; but the spleen, and the whole space extending to it from the liver, are to be treated with fomentations of the like kind.

Since the pain of the spleen (as we observed at §. 923, No. 3.) is a sign the matter of the disease obstructing the liver is now rendered fluxile or moveable, it plainly appears that nothing more is required, than what was before laid down.

S E C T. DCCCCXXVII.

IN the fourth case (§. 923, No. 4.) of an hæmorrhage, the nostrils are to be externally and internally fomented with emollient and warm liquors, till blood enough has been discharged to relieve the symptoms; but afterwards, if the flux of blood continues to excess, it must by degrees be checked, or stopped by styptics, with suitable diet; but this must not be done too suddenly.

By what signs one may foresee a future hæmorrhage from the nose in diseases, was before declared

at §. 741; and therefore, when those signs are present, it is our business to promote this salutary discharge of nature, which may be very well effected by the application of warm fomentations to the forehead, and more especially by warm vapours drawn in through the nostrils, which much more relax and mollify than hot water itself. Such large and critical hæmorrhages from the nose, usually lessen all the symptoms immediately, and 'tis seldom that any danger attends from too copious a flux of the blood; for so soon as the patient begins to be weakened, and to sink almost into a fainting or swoon, the open arteries in the nostrils then contract, and the hæmorrhage ceases. But if the blood shall continue to flow after the signs of such a fainting have appeared, it ought then to be stopped, and not otherwise; for there will be great danger of a fatal return of the malady, if the over-timorous physician shall too hastily suppress the hæmorrhage from the nostrils. But in what manner, and by what remedies an hæmorrhage from the nose may be suppressed, and what particulars are to be observed in this respect, may be seen where we before treated upon the same subject, in the commentaries to §. 743. Forms of styptics for this intention, may be seen in the materia medica, at the number of the present aphorism, where there are several differing in strength, according to the particular circumstances.

S E C T. DCCCCXXVIII.

Finally, in the fifth condition of this malady, under critical sweats (§. 923. No. 5.), a plentiful use of diluent and absterfive decoctions is necessary.

The critical sweats of the kind here mentioned are to be kept up, or continued by a plentiful use of diluent

diluent liquors; and such internals as are nearly of the same kind with those ordered at §. 924, are here serviceable: but the heating sudorifics, which operate by causing a greater motion in the humours, cannot here be so safely trusted. Plenty of the whey of milk drunk hot, and in a warm bed, will successfully support and forward such critical sweats, and at the same time reasonably replenish the blood with such liquid parts as are required to prevent its being over-drained or thickened by such great sweats.

S E C T. DCCCCXXIX.

DURING these critical discharges (§. 924, to 929.) 'tis a caution more especially to be observed, not to let any of the matter of the distemper remain behind in the viscera, or parts affected, from which it will be difficult afterwards to remove; and thus you cure the first or mildest kind of the jaundice.

So long as the motion of the fever continues moderate, and treated with the resolvent medicines before advised, the obstructions formed in the liver may be opened, so as to restore the patient to perfect health; but if, when the distemper is going off, the tired patient refuses further help, or if the physician carelessly neglects to treat timely the remains of the distemper, chronical disorders are then usually left behind, which prove extremely difficult to cure; particularly schirrhous indurations in the liver. In autumnal, epidemical fevers, which follow after the hottest summers, it often happens that a slight inflammation of the liver is an attendant among the other symptoms; and when such a fever is removed, or extinguished before the febrile viscid, that lodged within the obstructed vessels of the liver be thoroughly dissolved, the surviving patient often lives in an unhealthy

healthy or languishing way, with a pale-yellowish or waxen countenance, and is not without the utmost difficulty recoverable to sound health; at least it will be a work infinitely more laborious, or difficult, to remove obstructions in the liver that are once confirmed and inveterate, when they might have been easily resolved in the beginning of the distemper. But this difficulty here principally arises from the lost or spent motion of the blood, which now becomes venal in the portal branches, and moves by them through the liver with much less force, as being destitute of that impulse from the heart and arteries which urges the blood through other parts. Hence *Hippocrates*^a, who describes an hepatitis (but with a different appellation), well observes to us, that many who have had their distemper only quieted or imperfectly cured, have afterwards had a return of the same malady, and that then they are in great danger of a consumption; and he afterwards adds that, for forty-five days after the violence of the distemper is over, the patient ought to be kept in the lightest or best regimen of diet, and make the whey of milk his daily drink, if the season of the year favours, because the disease is stubborn, and requires a long treatment.

But of the signs which denote a perfect cure of the malady, we shall treat at §. 931.

S E C T. DCCCCXXX.

IF the hepatitis be recent but violent, and without affording any signs of hope, or critical discharges (§. 922, 923.) it must then be treated with the same cautions, with the like remedies, and under a similar regimen with what we before prescribed (§. 890.) for pleurisy.

^a De Internis Affectionibus, Cap. L. Charter. Tom. VII p. 674, 675.

pleurify or an inflammation of the diaphragm (§. 911.), and the like distempers; only here, more particularly, relief may in a greater degree be had from those things, which having a gently cooling force, also relax the bowels at the same time, administered both as drinks, and injected as clysters.

What treatment is necessary towards inflammatory diseases that give us hopes for obtaining a cure by a resolution of the phlegmon, while at the same time there appear no signs which denote that the matter of the disease is concocted and disposed for excretion, we have already sufficiently explained under the acute inflammatory diseases that have been hitherto expounded; for they require to be treated after the same manner: and for this reason *Hippocrates*^b only says, speaking of an hepatitis, *Huic confert, cum dolor detinet, tum alia, tum fomenta eadem, quæ pleuritidi admove*re. “To this malady, when painful, ’tis proper to apply the same and other fomentations, as in a pleurisy.” We shall not therefore now again repeat those particulars; but things which gently relax the bowels, without exciting any great purgative commotion, are here more especially applauded, both because it is of service to have the large intestines disencumbered with fæces, that there may be no pressure or distention on the liver from the colon, which last runs a considerable way under, and in contact with the former; and because it is necessary to have a free and open passage, by which the obstructing matter resolved in the liver may gain an easy descent, by the hepatic duct, into the intestines. Clysters are also recommended for the same reasons, and because when they are injected and long retained, they both foment and are drank up by the meseraic veins, so as to pass directly to the liver

^b Ibidem, Cap. xxxix. pag. 659.

with their medicinal virtues little or nothing altered. *Aretæus*^c seems to hint at something of the same kind when he says, *Inedia primum jubenda est, postea ciborum paucitas, ut ingredientibus (medicamentis) hepatis vacuum sit*: “ Abstinence is first to be enjoined to the patient, and afterwards a spare diet, that the liver may be empty for the medicines to enter in to it;” that is to say, for the medicines to penetrate easily into the smallest streights of the vessels. In the *materia medica*, at the number of this aphorism, the principal remedies that conduce to these purposes are enumerated, and some compound forms are given.

S E C T. DCCCCXXXI.

BUT the signs of a compleat cure made in this malady are, if there be no remains of that discolouration in the eyes, face, urine, and stools, which is peculiar to a jaundice, with the absence of the other symptoms (at §. 918.)

The effects of a present hepatitis were reckoned up at §. 918, which make at the same time the diagnostic signs of this malady. Among those signs the icteritious colour is mentioned, with a remark upon the degrees and varieties that may be observed therein; but such an icteritious colour always denotes that either the bile, or the immediate matter for making bile, returns back again from the liver into the whole blood, wherein it ought not naturally to reside; and therefore it implies some vice or defect in that organ, whose office is to separate the bile and pour it into the intestines: but a jaundice-colour always first shews itself to observation in the tunica adnata, or white of the eye, which is also the last visible seat from whence this appearance of the distemper withdraws; for when the other symptoms

^c De curatione morbor. acut. Lib. II. Cap. vi. pag. 106, 107.

of an hepatitis have already ceased, or at least are greatly abated, such a colour still remains there, although it be fainter. So likewise in this malady the urine is observed of an intense yellow colour, and the *fæces* of the intestines look whitish, or of a clay-like grey colour, when the bile is either wholly intercepted, or at least sent in a much less quantity into the intestines, than it usually was sent in time of health.

When therefore no further yellowness is observable in the eyes, while the pale, yellow, or waxen colour goes off from the face, and the urine, with the intestinal *fæces*, recover their natural appearance, while at the same time no pain or oppression is felt about the right hypochondrium, especially after feeding or filling the stomach, or after somewhat more than usual exercise of body; we then know the cure of this malady to be compleat, and more especially when, for several weeks after, there are no returns of these signs or complaints: for great care is here necessary, not to leave behind any remains of the distemper within the liver, since most chronical distempers take their origin from an inflammation of the liver, either neglected, or ill cured.

S E C T. DCCCCXXXII.

WHAT has been hitherto advanced upon this malady, will lead us into a knowledge of the origin, nature, effects, and cure of the second and more mischievous kind of the jaundice.

The author of these aphorisms here distinguisheth several kinds of the jaundice, according to the diversity of the productive causes; yet the same appellation is still continued to the distemper, while at the same time a very different method of cure is required in it.

S E C T. DCCCCXXXIII.

BUT if when the liver is thus inflamed (§. 914, 915.), the fore-mentioned remedies (§. 922 to 931.) are used, either too late, or not at all, or are applied without success; the cause now becomes greater, and in consequence a suppuration will arise in the liver as in other parts (§. 387, 402.); only here, from the abundance of the almost stagnant juices, either bloody or bilious, there will seldom be formed a mild or laudable matter, unless it be in little portions on the outer surface of the liver, but generally a fatal putrefaction.

In what manner, and from what causes an inflammation may tend to a suppuration, has already been declared before, both in our history of inflammation, and in the acute inflammatory diseases before considered; and therefore it will be here sufficient only to remark what renders a suppuration more dangerous in the liver than in other parts of the body.

The whole liver is full of blood, so soft and friable a viscus, that *Aretæus*^d tells us, *Totum jecur est instar sanguinis gelati*: the whole liver is like unto “congealed blood:” but this blood it is which contains the immediate matter of the bile; besides which, a very considerable part of the liver is made up of secretory ducts already full of bile: for which reasons, as was before shewn (at §. 918.) all these parts are so much inclined to a putrefaction. But on the contrary, a mild or laudable suppuration (see §. 387.) requires the humours to be of a disposition soft or without acrimony; and therefore ’tis evident a fatal putrefaction is always to be feared in the liver, and must take place there much oftener than a laudable

^d De curatione morbor. acut. Lib. II. Cap. vi. pag. 106, 107.

able suppuration. From hence *Aetius* ^e tells us, *Omnino consimilia ex hepatis ulceribus promanare solent his, quae a mortuorum corporibus destillant.* “ That it “ is customary for such humours to flow from ulcers “ of the liver, as altogether resemble those that “ drain from corrupting bodies.” I have frequently seen, as a very nauseous spectacle, in bodies dead of an hepatitis, that such a cadaverous or corrupted filth, of the most intolerable smell, has issued out through the nose and mouth. Therefore *Hippocrates* ^f has very well remarked the different events of a suppuration formed in the liver, when he pronounces, *Qui suppurato hepate uruntur, si pus purum & album fluat, evadunt; in tunica enim his pus inest: si vero qualis amurca fluat, pereunt.* “ Those who have an “ opening made by caustic or cautery from an ab- “ scess in the liver, recover if the discharged mat- “ ter be laudable, or pure and white; for that in “ these cases the matter is included in a cyst or tu- “ nic; but if the matter flows out like filthy lees of “ oil or wine, such patients are lost.” For when a laudable suppuration is formed, the matter gathers itself within one confined space, and is probably more especially thus conditioned, when the abscess is seated in the outer and convex part of the liver, covered over and confined by the outer membrane thereof: but when the abscess is formed within the interior substance of the liver, it then changes every thing into such a putrid filth as resembles dregs or lees, leaving no hopes of a recovery.

S E C T. DCCCCXXXIV.

SUCH a suppuration is known to be approaching in the liver, 1. From the signs of an antecedent inflammation in the part, with an inflammatory pain, and the appearances of a yellow

^e Serm. 10. Latin. edit. pag. 206. ^f Aphor. 45. Sect. VII. Charter. Tom. IX. pag. 316.

yellow jaundice in the eyes, skin, urine, and fæces of the intestines, and with a fever evidently acute. 2. From the deficiency or want of a resolution (§. 922.), and excretion of matter concocted (§. 923.); or of the proper curative treatment (§. 924 to 933.). 3. From the change of the symptoms, an abatement of the sharpness of the pain, and of the consequent pulsation or throbbing, while the jaundice still continues, with shiverings that are vague or unperiodical. And lastly, 4. From the inflammation having been none of the most violent, and not longer than of three days continuance.

When we know for certain that an inflammatory hepatitis has once preceded, there can be then no great difficulty in forming a diagnosis, as to the ending of such an inflammation into a suppuration.

1.] This number includes the anamnestic or *commemorative* signs, which recal back to the physician's knowledge a past inflammation; but of these signs we have before treated.

2.] For by these defects we know the inflammatory or obstructing viscid still remains in its primitive lodgments.

3.] Concerning these signs, which usually attend inflammations, fixed in the interior parts of the body tending to suppuration, and of the shiverings which, not being periodical, join the suppuration, we before treated at §. 834, where we considered the like termination of a peripneumony.

4.] For if the inflammation be of the most violent kind, and joined with the worst symptoms, we may then rather expect a fatal gangrene, or a malignant putrefaction, than a suppuration. But when all the signs of an inflammation have continued above three
days

days without any appearance of a resolution, or concoction and excretion of the matter of the distemper, the pulpy vessels of so tender a part as the liver, stuffed with impervious and inflammatory blood, cannot sustain the vital impulse of the circulation, now increased by a fever, but a rupture of the vessels, and an effusion of their contents, will ensue; from whence matter is then formed, as we before explained it in the comment to §. 387.

S E C T. DCCCCXXXV.

THAT a suppuration in the liver is once formed we know, 1. By the preceding signs (§. 934.) having been observed. 2. From a swelling in the part affected. 3. From the alteration of the symptoms; a heaviness or dull sense of uneasiness being now in the part instead of a pain, while the jaundice still continues. 4. From the great weakness of the patient, with an hectic fever, and great thirst.

1.] This diagnostic fountain is self-apparent.

2.] We know well, from anatomy, how large a space of the abdomen is taken up by the liver, and that therefore such a swelling may point or shew itself in divers quarters of the hypochondrium. For unless such an abscess of the liver shews itself outwardly, it is not easily discoverable to the senses; but if it lies within the concave part of the liver, and without being of a considerable bulk, every one must well know the difficulty of distinguishing such a tumour outwardly.

Moreover, it is possible that the gall-bladder, distended with bile, and projecting its bottom below the margins of the false ribs, may lead the observer to mistake it for an abscess. In the year 1732, I opened the body of a poor woman who had been
long

long afflicted with a jaundice, and, for the two last months of her life, had been able to bear no food upon her stomach, so that she died wasted by a slow marasmus or consumption of the habit. Upon viewing the body before it was opened, the skin appeared every where yellow, and the fat all entirely exhausted, whilst in the right ilium or flank, a soft tumour shewed itself, extending from the lower margin of the false ribs down to the crista or spine of the os ilii; and as she had long before death complained of a stubborn pain felt through the whole hypochondrium and ilium of the right side, I must confess, I suspected that a large vomica or abscess of the liver might here conceal itself; but the body being opened shewed the following appearances.

The stomach was very large, and distended with a flatulent matter, and hanging pendulous from its two orifices, it descended so low, that the bottom of the stomach came within three fingers breadth of the ossa pubis. The omentum and colon, annexed to the bottom of the stomach, were thrust backward still lower: the liver shewed itself of a bluish colour, hard and juiceless, projecting beyond the margin of the right false ribs; yet no vomica was found in the liver, only the branches of the vena portarum dispersed through it, were very much enlarged or distended, as were also the veins of the omentum, mesentery, and intestines, after the manner of varices, and were very turgid with blood, while the rest of the body appeared almost bloodless. Now this tumour, which had shewed itself in the right ilium, was the bottom of the gall-bladder enlarged by its contained liquid, and extended as low as the right os ileum. The gall-bladder contained more than a pound of a limpid and inodorous liquor, a little inclined to a greenish-colour; and of a saltish taste, together with which were a great number of stones of various sizes and figures, which appeared outwardly to have a white crust of an harder consistence, which,
being

being broken, contained a much softer and very yellow substance in its middle.

I have since read ^g that faithful observations have shewn, that the gall-bladder thus filled and distended, has often occasioned a tumour that has been mistaken for an abscess of the liver: and the celebrated M. *Petit* confesses, that in a consultation among many other physicians and surgeons, such a tumour of the gall-bladder was unanimously agreed to be an abscess of the liver, the opening of which was assigned to be his province. But having cut through the integuments, this incomparable surgeon perceived the tumour subside or fall back, which brought to mind a like case before observed; and therefore he went no further on with the incision, but predicted that the bile would soon come away by stool, which had lain imprisoned in the gall-bladder. The apparatus of dressings had not been long applied to the patient's wound, but there was a stool which brought away a great quantity of green bile; and, in a few days after, health was again restored. There are many more observations of the like kind upon record.

The principal diagnostic signs, by which a tumour of the gall-bladder may be distinguished from an abscess of the liver, are, that the pain in the suppuration is throbbing, or with a pulsation, attended with unsettled shiverings, that are both frequent and hold for some time; that the tumour of an abscess has not so uniform or circumscribed a figure, nor is there in it at first such apparent or easy fluctuation, which is most sensibly to be perceived only in the center of the tumour, from whence all the circumference makes a harder resistance ^h. But it is obvious enough that the difficulty of distinguishing these tumours, is only when they occupy that region of the liver wherein the gall-bladder is placed.

3.] Upon

^g Memoires del'Academ. Royale de Chirurgie Tom. I. pag. 155, &c. ^h Ibidem, pag. 161.

3.] Upon this head you may consult what was before said on the change of the symptoms which attend while an inflammation is changing into an abscess, as at §. 387, and §. 405.

4.] It was before remarked, at §. 661, where we treated of weakness in fevers, that sometimes a very sudden and great feebleness follows, when any corrupt matter is lodged about the precordia. But since in the present malady (see §. 918.) there is always danger of a putrefaction, and laudable matter being very rarely produced in this affected part, (see §. 933.) the reason is from thence evident, why a great weakness usually attends an abscess of the liver. But concerning the hectic fever, which usually accompanies all internal suppurations, we treated before at §. 835. Now since it was before proved (at §. 636.) that a bilious or oily acrimony, with putrid excrements, lodged in the first passages, create a febrile thirst, the reason is very evident why there is sometimes such a violent thirst, in company with this distemper, as no liquor can extinguish, of which practical observations assure us. Upon this account also the appetite to foods is, at the same time, commonly quite destroyed. In a person who had an abscess formed in the liver from a violent outward contusion, there was so great a loathing to food, that for want of nourishment, the patient was in the space of fifteen days wholly emaciated ⁱ.

S E C T. DCCCCXXXVI.

THE consequence of such an abscess is, that it either, 1. eats up the whole body of the liver; or, 2. that it breaks open into the capacity of the abdomen, and there pours out its corrupted matter; or, 3. that it makes a way through the bilious passages into the intestines:

ⁱ La Motte Traité complet de Chirurg. Tom. I. pag. 318.

stines: or, 4. that it soaks through the vena cava in the whole blood: or, lastly, 5. rising up into a swelling, it grows to the peritoneum, where, appearing to the sight, it breaks, or forms an outward abscess of the liver.

We come now to the different events of an abscess formed in the liver.

1.] It was before proved, §. 406, in treating on an abscess, that matter left in a part close confined, continually augments, and goes on to consume or eat through the parts in contact, which will be still true in a much greater degree in the liver, that has so soft and friable a substance. And even if the matter be in all respects good or laudable, it may thus consume the substance of the liver, as *Diemerbroeck*^k assures us by observation; for in a deceased body he found the liver of an immense bulk; and although it seemed outwardly of a good colour and sound in substance, he took out from it eleven ordinary pounds of white concocted matter that had no foetid smell. More instances of this kind you may see in *Bonetus*^l.

2.] This consequence follows when the abscess breaks open, either by the quantity of the matter, or by the acrimony of it, acquired by long standing, and eating through the including membranes.

3.] From the known structure of the liver, it is very evident, that the extremities of the bilious ducts being eroded, the purulent matter may flow into the hepatic duct, and from thence pass into the intestines. Such a termination of a suppurated hepatitis, seems to have been remarked by *Hippocrates*^m, when he says, *Qui circa hepar dolent, cardialgici, soporosi, rigentes, alvo turbata, extenuati, cibos fastidientes,*

^k Anatom. Lib. I. Cap. xiv. pag. 65.
 Lib. III. Sect. 17. Tom. II. pag. 295.
 448. Charter. Tom. VIII. pag. 878.

^l Anatom. Pract.
^m Coac. Praenot.

dientes, multis sudoribus diffuentes, purulenta per alvum dejiciunt. “ Those who feel a pain about their
 “ liver, anguish about the heart or stomach, drowsi-
 “ nefs, shiverings, with disturbed bowels or stools,
 “ and loathing of the foods, such fall away in their
 “ body, melt in profuse sweats, and have purulent
 “ discharges by stools.”

4.] And that the matter may also this way pass from the suppurated liver into the blood, is plain enough; but when it is once intermixed with the blood, it there produces all the bad consequences concerning which we shall treat at §. 941. Perhaps, likewise, it may be deposited by metastasis or translation, upon other parts of the body, and with various effects, according to the difference of the part which it occupies. The following passage of *Hippocrates*ⁿ seems to point out something of this kind; *quibus magnum & crebrum spiritum ducentibus ieteri, & febres acutae cum duris hypochondriis refrigeratae fuerint, num his abscessus magni circa aures excitantur?*

“ In those who have a jaundice, with a difficult, or
 “ deep, and quick breathing, cold chills joined with
 “ severe heats, and a hardness in the hypochondria;
 “ may not large abscesses be excited in these below
 “ the ears?” But that not much relief is to be from
 thence expected, may appear from the passages cited
 at §. 840, and from the following^o, *ex hypochondrio diuturno (diu affecto vel tumente) abscessus circa aurem occidit.* “ An abscess formed under the ears, from a
 “ lingering disorder in the hypochondrium, takes off
 “ the patient.”

5.] That inflamed parts adjacent often grow one to another, was shewn before (at §. 843.); and, therefore, the liver may in like manner grow to the contiguous peritonæum, upon which it presses; and by that means the patient may have the abscess point fortunately outwards, so as to allow an opening,
 and

ⁿ Praediction. Lib. I. No. 166. Charter. Tom. VIII. pag. 806.

^o Coac. Praenot. No. 293. Charter. Tom. VIII. pag. 868.

and a discharge of the collected matter: but then such a cohesion may take place throughout the whole surface of the liver, that lies contiguous with the peritonæum, and yet it will not be in all parts equally easy for the hand of the surgeon to procure an opening. For if the gibbous part of the liver shall grow to the peritonæum that lines the diaphragm, the collected matter may pass from the liver into the capacity of the breast, or even into the lungs themselves, and be thrown out by purulent spittings; as *Stalpart Vander Wiel* ^P observed in a man, who died of a suppuration in the liver; for he was surpris'd to find a purulent spitting, without any signs of the lungs themselves being affected; and while all the symptoms shewed the liver to be the seat of the disorder. After the death of this man, he saw that a vomica, or abscess of the liver, was grown to the right side of the diaphragm, to which the lungs also cohered in the same place; whence the matter had a direct passage from the liver into the lungs, and was evacuated by spittings.

S E C T. DCCCCXXXVII.

WHEN the liver itself is consumed by the abscess, the patient then languishes for a long time under a slow icteritious consumption, with a continual slight fever, intolerable thirst, and great weakness, unexpressible anguish, urine almost of a black colour, a tympany, or flatulent distention of the belly, and a flux of most foetid and corrupt matter in the stools, till at length death puts an end to the lingering fight.

The bad symptoms which attend while the liver is wasting by a purulent abscess or vomica, proceed
VOL. IX. Q partly

partly from the return of matter which is absorbed, and causes a purulent cacoehymia of the blood; and in part from the hindrance of those functions which depend upon a healthy state of this important viscus: for here the quantity of collected matter is every day increased, from whence sometimes it has been found amounting in the liver to an incredible measure; and at the same time by distorting and compressing the adjacent organs, that lie near to the liver, it may become productive of many other evils. From hence *Aretæus*^q, among the other symptoms that attend a suppuration of the liver, reckons up a sharp pain extending as high as the throat, and top of the shoulder, because the diaphragm, with the pleura connected to it, are hereby much strained. Moreover the matter here confined in a warm place, continually shook by the motion of respiration, is thus attenuated, rendered more corroding, and gains a more easy absorption into the veins. The chief ill consequences that ensue from the matter too long remaining in a close abscess, have been before enumerated, at §. 406, and those will be here found still in a much worse degree, as every thing is more disposed to the worst putrefaction (see §. 918.) from whence the thirst is here more violent, as we remarked above. But a jaundice will at the same time be present with the abscess, if the bulk or pressure of the last hinders the free exit of the cystic bile into the intestines; for otherwise, as we shewed at §. 918, a jaundice does not always accompany a vomica of the liver; and *Le Motte* himself was surpris'd to find a large abscess of the liver not attended with any jaundice^r. But then that abscess arose from an outward contusion, and being seated in the gibbous part of the liver, it pointed, or enlarged itself externally, so that an opening was made for the discharge of

^q De causis & signis morbor. diuturn. Lib. I. Cap. XIII. pag 41. ^r Traité Complet de Chirurg, Tom. I. pag. 327.

of its matter by incision, whence it must of course make but little compressure upon the internal parts.

But great anguish here attends, from the turgid abscess compressing the adjacent blood-vessels, that are distributed through the liver, whereby the venal blood of the abdomen is hindered from returning through the branches of the vena portarum, from whence we proved anguish to arise at §. 631.

But the urine is here very thick, and of a dark colour, almost inclined to a black, when there is the worst kind of jaundice, or when that corrupted, filthy, and cadaverous matter, which flows from the wasting liver into the blood, gains itself a discharge in the urine. Even healthy urine itself, when it begins to put on a state of putrefaction, acquires a brown colour.

But a putrefaction being formed in the humours, air is extricated from them, which puts on a state of elasticity (see §. 647.), and causes a windy distention of the abdomen, that is called a tympany; because by striking the belly with one's hand it yields a sound somewhat like a drum; concerning which distemper we shall treat more particularly hereafter, when we come to the chapter upon a dropsy. 'Tis enough here for us to observe, that such a putrefaction arising in the abdominal viscera, often occasions such a swelling of the belly a little before death, and always carries with it the worst presage; and sometimes the belly is in this manner so much swelled soon after death as to be near upon bursting, as I have often observed in bodies deceased of the present malady. In the same manner we see the dead bodies of drowned animals, when they begin to putrify, swim above the surface, with a puffed up belly, which soon after bursting sends forth to a large compass a most dreadful and sickly exhalation.

Finally, when the liver is at length consumed, the putrid and filthy matter drains thence into the intestines; or having been absorbed into the blood,

and occasioned a putrid dissolution of the healthy texture of that fluid, it flows together with that into the intestines, by the meseraic vessels, and goes thence out by stools. Such usually is the fatal ending of every purulent consumption, as we shall shew hereafter at §. 1206; and this obtains in a greater degree under our present malady, as it is attended with a worse putrefaction: therefore *Aretæus*^s in this case tells us, that if an ill-smelling matter, almost like a cadaverous putrefaction, be expelled by stool, then a sharp fever arises, all the appearances change for the worse, the flesh melts away, the pulse becomes small, the breathing difficult, and soon after death puts a period to the whole.

S E C T. DCCCCXXXVIII.

BUT the case (§. 937.) being so far advanced, admits not of a cure, and will even hardly allow of any palliation, or relief; here then we have another state, or new face of the jaundice.

So long as there is no great quantity of matter collected in the liver, and it has not long lain there, or is not much corrupted from its laudable state, there is some reason to hope for the patient's recovery; but when once the whole liver is eaten up by the confined matter, corrupted or rendered more acrid, 'tis then very apparent there can be no hopes of entering into any treatment that shall over-power such a malady.

But still in diseases that are incurable the physician has some business, if it be only to alleviate the symptoms, and render the malady more easily tolerable during the unhappy life of the patient: but in many cases even this lies but very little within the power of

^s Loco citato pag. 42.

of art; for in that before us the troublesome anguish cannot be relieved, since it requires a free passage of the blood from the abdominal viscera, through the vena portarum, here impracticable; the intolerable thirst can be extinguished by no drinks, because it arises from a source of corrupt matter, every day increasing in malignity; but in the beginning, agreeable acids in a large proportion of watery liquors, give some help; as the juice of citrons, oranges, granates, vinegar, dulcified spirits of nitre, &c. but the disease being further advanced, even these prove of little service; and to fill the stomach with them by repeated drinking, will greatly increase the anguish. Here we have not one cordial that can remove the debility which springs from the melting putrefaction; and therefore death only is able to put an end to so many evils.

S E C T. DCCCCXXXIX.

IF ulcers are formed in the liver by an abscess, upon breaking, they will pour out their corruption into the capacity of the abdomen, where, to the matter that is collected, there will be daily made new additions; thus all the humours and nourishment of the body will be converted into new parcels of matter, whence all the viscera will be corrupted, so as to create a purulent ascites that resembles a tympany, and from thence, after a slow and terrible consumption, with all its symptoms, death itself follows: but this kind of the jaundice, much like the former (§. 938.), is curable by no art.

That a vomica formed in the liver may, upon breaking, pour out its contained matter into the capacity of the abdomen, is not to be doubted; and

there are instances of this to be seen in the sepulchretum of *Bonetas* ^t. But the reasons for which such a disorder becomes incurable, were before declared at §. 912, 913, where we treated upon a suppuration of the diaphragm. But such a disorder arising from an abscess of the liver, will much less admit of a cure, because both a greater quantity of the matter, and of a much more corrupt nature, will be daily generated in the liver, from the much larger quantity of blood that is obliged to pass thro' that viscus; and thus the purulent ascites will be daily increased, while all the viscera are soaked and melted in the said corrupted matter. But why this is followed by a tympany, we before shewed at §. 937. Even here there is great danger of a fainting and sudden death, which may follow at the time when the abscess breaks open; for the branches of the portal vein in the liver, which were before compressed by the abscess, being now disencumbered from the matter, may easily break open by the force of the influent blood, more especially when they have been a long time macerated, and in a manner half-eaten through by a matter more than usually acrid.

'Tis very evident therefore, that this kind of the malady must be equally incurable with the former; and that here also little good can be expected from any palliative treatment.

S E C T. DCCCXL.

BUT when the suppurated matter and ichor, having eaten through the extremities of the biliary ducts, flows in their canals of a larger capacity, and from them into the intestines, it will excite, conformable to the different course of life, vomitings of matter foetid, putrid, purulent, ichorous, white, yellow, grey, brown,

or.

or even black-coloured; or else there will be the like evacuations by stool, with extreme loss of strength, under the denomination of a colliquative flux or purging, that will be soon fatal. Here again we have a new termination of the jaundice, the most of all to be dreaded.

Since the biliary pores, becoming gradually larger, do finally terminate together in one, called the hepatic duct, 'tis very apparent the purulent matter, which has once entered into them, may go on with a descent into the duodenum, from whence it may either flow into the stomach, and be discharged by vomiting, or it may descend through the whole tract of the intestines, and be evacuated in stools.

'Tis proper indeed that the purulent matter should be expelled from the body; but before it can be so discharged, a large part of the liver is often consumed by the suppuration, and the part ulcerated cannot be brought to a perfect depuration, without which it can never be closed or healed up (see §. 402.): or even if that was possible, so great a portion of the liver being carried away by the violent suppuration, what remains from it could never be brought to answer the healthy functions required by that important viscus; from whence it is very apparent there can be but small hopes of succeeding in such a case.

But the greater or less danger appears from the quantity and quality of the discharged matter: for if a very great quantity of matter, in other respects laudable, be this way evacuated of a sudden, we conclude from it, that a very considerable portion of the liver is melted down by the suppuration, and consequently that the danger is great in proportion. In a youth who, for want of blood-letting in the beginning of his distemper, fell into a purulent hepatitis, or suppuration of the liver, the celebrated

Tulpius^u could not, by all the endeavours of art, prevent its fatality, although the matter discharged itself by stool, and before the close of the distemper came up with equal freedom by the mouth. But when a foetid, ichorous, and variegated corrupt matter comes away, we apprehend the parts ulcerated to be in the very worst condition; more especially if that be followed with very great loss of strength, like that which usually attends the colliquative purging which we observe in the fatal close of a purulent consumption of the lungs: for in this manner the ample substance of the liver is sometimes so entirely exhausted, after being melted into corruption, that only its including membrane has been found remaining, of a thicker substance than usual, and resembling a hollow bag; examples of which there are several related in *Bianchi's* history of this organ^w.

From hence *Aretæus*^x, after having admonished that a suppuration of the liver sometimes flows to the intestines, he reckons up the different kinds of matter that are then evacuated by stool, and almost constantly with a bad event: and at the same time he also observes, that the liver being so largely injured by the violent suppuration, does not concoct the aliments; from whence some, after being cured of an hepatic ulcer, have yet fallen into a dropsy. But that such patients have only just grounds to hope for a recovery, *Si omnia remittantur, pus album, leve, aequale, inodorum venter dejiciat, cibaria vero concoquat.* “If they digest their aliments well, while all
 “ the symptoms are abated, and a white, uniform,
 “ unacid, and inodorous matter comes away by
 “ stool.” For these signs demonstrate a good suppuration, with a strong or sound state of the viscera still remaining.

In

^u Observ. Med. Lib. II. Cap. xxvii. pag. 141. ^w Hist. Hepat. part. 2. Cap. ix. pag. 173.
 diurn Lib. I. Cap. xiiii. pag. 42. ^x De causis & signis morb.

In this case then, such medicines will be useful as resist all putrefaction, and gently deterge or cleanse ulcerated parts, such as we recommended at §. 924.

S E C T. DCCCCXLI.

BUT if the same purulent liquid (§. 941.) shall have eaten through the ends of the vena cava in the liver, so as to transfuse itself through that vessel into the blood, by intermixing therewith the most mischievous symptoms arise, and prove speedily fatal; such as frequent and extraordinary faintings, extreme weakness; the pulse is in all respects bad; all the functions appear disturbed at the same time, and death unexpectedly ensues. This again makes another kind of the jaundice.

It is well known that the lower vena cava appears in a manner to be rooted into the substance of the liver, from which passing out thro' the diaphragm, it immediately goes into the right sinus; and therefore, if a large quantity of matter is this way suddenly mix'd with the venal blood, it is the next moment afterwards driven through the streights of the lungs, where it may be arrested, so as to produce a sudden suffocation. But if instead of good matter, an acrid ichor, or putrid sanies, shall thus flow into the blood, and be with that distributed throughout the body, 'tis easily intelligible that all the functions of the body must together, and at the same time, be disturbed; and that the tender vessels of the encephalon and lungs may be eaten through by the said acrid humours, from whence sudden and unavoidable death may ensue. But if only an increased quantity of good chyle, suddenly intermixing with the blood, can excite a fever (see §. 586. ε.); and if the critical matter of a fever, resolved and rendered fluxile,

fluxile, can excite so many disturbances in the body, what mischiefs are we not to expect and fear from a corrupt ichor poured into the blood?

But when the matter collected in the liver is slowly or insensibly intermixed with the blood, before it has yet degenerated from the conditions of good matter, it may then be possibly washed out in the urine, or else be removed by metastasis upon some less dangerous part: but then, as it was said at §. 936, 4. the observations of *Hippocrates* seem to persuade us, that a salutary translation cannot easily happen in this case. But that it may sometimes pass out by urine. *Aretæus* ^y has admonished us, when he says, *Si vero ad interiora repat abscessus, longe medicina praeestat: aut enim ad intestina, aut ad vesicam pus convertet: verum multo innocentior est ad vesicam via.* “ But if the abscess creeps to the inter-
 “ nal viscera, nature may do much more than the
 “ physician; for either the matter then takes its
 “ course to the intestines or to the bladder; but the
 “ passage to the bladder is by much the least offen-
 “ sive or mischievous.” But afterwards, where he treats upon a discharge of purulent matter by stool, that has been collected in the liver, he subjoins, *Optimum vero est, per urinas crisin fieri; securior enim & minus noxia est haec puris via.* “ But ’tis
 “ best for the critical discharge to be made by
 “ urines; for the purulency may pass this way more
 “ securely, and with less mischief.”

S E C T. DCCCCXLII.

IN this case (§. 491.) there is indeed no valid cure to be had; but a plentiful use of such aliments and medicines as recruit the powers, resist putrefaction, and supply the necessary moisture, will be of some benefit.

From

^y De causis & signis morbi diuturni. Lib. I. Cap. XIII. p. 42.

From what has been said 'tis plain, that in the present circumstances, there is the utmost danger of the very worst consequences following from the blood charged with a purulent cacochymia; but much more if the matter collected in the liver is already begun to corrupt into a putrid sanies. The only intention of the physician that then remains, is to wash out from the blood the said corrupt matter, by exhibiting a large quantity of mild, diluent, and detergent liquors; to expel the putrefaction which is here so much to be feared, or at least correct it as much as lies in the powers of art; and which, at the same time, may supply a mild nourishment, the most averse to putrefaction, instead of that which is corrupted or exhausted. The whey of new-milk boiled with sorrel, the broths of veal or poultry taken with the juice of citrons or oranges, panada, rice or oat-meal-gruel, and the like, in which some old-hoc or Rhenish-wine is diluted, are here preferable beyond others for service. The mineral acid spirits, especially those from sea-salt, dulcified or well united by repeated distillations, with thrice their weight of alcohol vini, are most efficacious correctors of putrefaction: in the same case also mineral waters are recommended, inasmuch as they wash and absterge all the nervous vessels, and carry out the matter by urine, or sometimes by stool. But great weakness usually accompanies this malady, and all practical physicians observe that these waters, which are in other respects so salutary, profit not in the present malady, unless the vital powers in the patient are strong enough to move and expel them. Forms of medicines, serviceable in the present malady, are proposed in the materia medica at §. 944.

S E C T. DCCCCXLIII.

BUT when the last kind of this malady (§. 936. No. 5.) is observed to be the case, then the tumour properly held or secured, is to be opened either by seton, actual cautery, caustics, or lancet; and the wound made is to be afterwards gently eroded or enlarged, to a greater depth by suppuratives and escharotics, until it extends to the vomica or abscess.

In this case a way must be opened as soon as possible for the exit of the matter collected in the liver: for *Aretæus*² well observes, *Si extra feratur abscessus, non secare utique malum est: si enim ita sinatur, a pure jecur eroditur, nullaue mortis dilatio est.* “ If the
 “ abscess points outward, to neglect opening it by
 “ incision, is bad practice; for if it be thus left to
 “ itself, the liver is eat up by the matter, and there
 “ is nothing that can hinder it from being mortal.” But since the liver appears so bloody a viscus, that the ancients made it the origin of all the veins, and the fountain or reservoir of the blood itself, therefore *Aretæus*² soon after adds again, *Si secare autem malis, profluvii sanguinis periculum instat, statimque hominem perdi contingit, nam sanguinis e jecore profusio nullo modo coërceri potest.* “ But even if you make
 “ the incision here, ’tis a bad case, for there is dan-
 “ ger of an hæmorrhage, which may immediately
 “ destroy the patient; for there is no method of re-
 “ straining a profusion of blood from the liver.” Therefore he recommends to make the incision by an actual cautery, that may both cut and make an eschar at the same time; for that by this method the actual cautery removes all danger of an hæmorrhage,

² De causis & signis morb. diuturn. Lib. I. Cap. xiiii. pag. 42.
² Ibidem.

rhage, at the instant the wound is made. In this case *Hippocrates*^b also recommends the application of a cautery, when the liver is very much swelled, and points outwards. However, there seems to be no such great danger of a fatal hæmorrhage from an incision that is prudently performed; for when such an abscess is opened, the point of the knife or lancet is lodged in a bag full of matter, by which it is kept at a distance far enough from any subjacent blood-vessels. Besides, observations teach us that the whole substance of the viscera is sometimes melted down by a purulent abscess, without any consequent hæmorrhage, although they contain very large blood-vessels. This is apparent in pulmonary consumptions, in which the whole substance of the lungs is often consumed before the patients die, and at last they expire not with any hæmorrhage: and the celebrated *Le Motte*^c informs us, he was surprised to find an opened abscess in the liver, which discharged a pound and half of matter, and in which he could turn round his fist without any resistance, was nevertheless attended with no discharge of blood. Moreover *Aretæus*^d advises the actual cautery to be entered only deep enough to reach the matter, because the danger of this hæmorrhage springs from the vessels eaten through, or else injured by the knife, in the bottom of the abscess; and that therefore with this precaution there must be no danger of an hæmorrhage, since the cautery could not be able to reach the said vessels. Again, when eschars are thus produced by cauterising, they often require many days before they can be mollified and cast off from the living parts, which is not to be effected without the greatest pain; and even frequently such eschars, when they are upon the point of separation, require some assistance from the knife, when the purulent bag is not

^b De Internis affection. Cap. xxx. Charter. Tom. VII. pag. 661.

^c Traité complet de Chirurgie Tom. I. pag. 327.

^d Loco paulo ante citato.

not as yet opened ; of which case an instance is given us in *Bianchi*^e, where the eschar being deeply burnt by the potential cautery, yet required to be perforated by the knife. But since delays are dangerous in the present malady, an incision is evidently to be preferred to the caustic. But it is most adviseable first to lay open the integuments of the abdomen by an incision, that the pointing part of the abscess may come into view, and then it may be entered by the knife without any danger of injuring the circumjacent parts.

But since the event of such an operation is doubtful in so dangerous a malady, and it is from the condition only of the matter discharged, that we can be informed whether the patient will survive or not ; therefore proper notice must be given, that if a passage is not speedily procured for the collected matter to discharge itself from the liver, it must be shortly fatal ; and yet that one cannot promise a certain cure, altho' the abscess be opened. But by such a notice the physician may guard his own reputation.

S E C T. DCCCCXLIV.

IF the abscess thus opened sends out a matter that is white, uniform, unacid, and inodorous, not tinging the probe of silver with any rust or colour, there is reason to hope for a recovery ; for it ought to be treated as an ulcer (§. 402, 413.), while at the same time absterfive or cleansing medicines are used internally.

We have here recounted to us the conditions of laudable matter, of which we treated before at §. 387, and in other places following ; and from these we know that there is not a putrefaction, but that by

^e *Histor. hepat. parte tertia* Tom. I. pag. 368.

a mild suppuration the extremities of the vessels, stuffed with unpassable blood, are now digested off, from whence there may be hopes of a cure, although not without danger of failing; for even by a laudable suppuration in this large viscus, the patient may have his strength exhausted, and by degrees be wasted in a consumption. The passage of *Hippocrates* which gives us this prognosis, was before quoted at §. 933. But in what manner an open ulcer ought to be treated, was before declared in the chapter upon an abscess, at the numbers cited in the text.

At the same time those internal remedies will be likewise of use, which we recommended at §. 942, of which there are some forms that may be also seen in the *materia medica*, under the number of the present aphorism.

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S E C T. DCCCCXLV.

BUT if a sanious or filthy ichor is discharged from the ulcer, of a yellow, brown, livid, or black colour, and of an ill or foetid smell, tinging the probe with a variegated colour like the rainbow, the liver will be then slowly eaten up by the ulcer, the patient will be wasted with a consumption, and labour under symptoms almost the same with those before-mentioned at §. 941.

For all these appearances of the discharged matter denote that it degenerates from the laudable state and conditions of good or sound pus, described in the aphorism that went next before it; and indeed the matter discharged is more malignant, as it shews more of these bad qualities, which in the order they are here recounted, shew greater danger of an unhappy ending of the malady, and a greater degree of corruption. We then also, at the same time,
know

know that the parts ulcerated must be in the very worst condition, since they contain so corrupt a matter, and have confined it often for so considerable a time.

However, there are medical observations enough to shew that these patients sometimes recover, even when the opened abscess has discharged other matters besides a laudable pus; for in a youth of fourteen years old, who, after much heating his body, washed his feet in cold water, a fever arose, which at last occasioned a large abscess in the liver, by which his whole body was considerably wasted: but the abscess being afterwards opened, and the matter taken out, upon renewing the dressings conformable to the surgeon's apparatus, a very thick fordes or sort of bloody matter came out, and was found sometimes yellow, bitter, and in all respects bilious, having constantly in it some little fleecy portions that manifestly resembled the vascular parts of the liver itself: but lest this matter, stagnating in the ulcer, should be again absorbed and returned into mixture with the blood, a silver cannula, perforated laterally by many small holes, was by this most expert surgeon introduced into the opening of the abscess, that it might continually give a free exit to the collected matter; and to avoid any excoriation of the adjacent skin from the said matter, he covered it with thin lead. Thus the slow fever, which had hitherto attended, lessened daily, and the body by degrees recovered its former strength and dimensions, so that in a little time the ulcer was consolidated^f. But then it is observed, in this wonderful case, that the vomica was seated in the anterior and convex region of the liver; nor are there here those signs mentioned which denote that a great degree of putrefaction attended.

Sometimes again a different liquid from that of matter has been taken out from such an abscess, and yet the patient has survived: for thus *Lyserus*, in an epistle

^f Academ. des Sciences l'année 1730. Hist. pag. 53.

epistle to the celebrated *Bartholin*^s, remarks, that in a suppuration of the liver an opening was made for the matter, by the use of an actual cautery, which procured a plentiful discharge of it, and the flux remained copious several days after. But the surgeon having urged his probe deeply into the bottom of the ulcer, there flowed out a quantity of yellow water amounting to above three pounds; but the watery flux having ceased, matter again was discharged, and continued to flow for above a year, only in a moderate quantity, and a fustula was here left for its exclusion through the right hypochondrium.

From hence therefore it is apparent, that there is always great danger when the discharged matter degenerates from the state of laudable pus; but that we can only presage the case fatal when a putrified sanies is expelled. From hence too *Hippocrates*, in a passage lately cited from him at §. 933, and in his coan presages^h pronounces, *Quibus hepate inusto velut amurca exit, lethale*. “But when a filthy matter, “like the lees of oil, flows out from a cauterised “abscess of the liver, the case is fatal.” For the dark or blackish-coloured and greasy filth, that falls to the bottom of oil pressed from olives, is by the Greeks called ἀμύρην, *amurca*, lees or dregs, as appears from *Erotian*’s dictionaryⁱ, who has collected and explained the most of the terms of *Hippocrates*. But such a flux of fæcal or dreg like matter, from an opened abscess of the liver, denotes that the substance of that viscus is melting down in a putrifaction.

S E C T. DCCCCXLVI.

BUT again; if after an inflammation of the liver, you perceive the symptoms that before were enumerated at §. 392, a schirrhus is

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then

^s Epist. Thom. Barthol. Tom. II. pag. 639. ^h No. 451.
ⁱ Charter. Tom. VIII. pag. 878. Charter. Tom. II. pag.

then formed in this part; which of course, by its bulk, hardness, increase, and situation, will offer injury to the parts or viscera that are adjacent; from whence again almost the same kind of complaints, §. 918, will be, but more slowly, produced: and here the malady is not affected by any emollient resolvents; and as for violent or acrid ones, they change it into a cancer to be dreaded (§. 492.); the terrible effects of which last, may be understood from comparing the particulars of §. 499, with the nature of this part affected: but the principal or most conspicuous effect of such a schirrhous of the liver, is a perpetual jaundice.

How, and from what causes, an inflammation may turn into a schirrhous was before declared at §. 392; and in the inflammatory maladies that have been hitherto treated, it has been shewn, that such hard and indolent tumours sometimes are left behind, as by their bulk and pressure prove very troublesome to the adjacent vessels and viscera, as well as injurious to the functions of the part itself, in which they reside. But that such schirrhous indurations are often to be found in the liver, I can vouch from my own observations in deceased bodies; and the same is testified upon the undoubted credit of others. It was before said upon another occasion (see § 485.), that an atrabiliary matter of the blood and of the bile, often gave birth to a schirrhous; and that this last often made the cause of an hepatitis, or inflamed liver (§. 916). To this cause also concurs the slower and weaker course of the blood, moved through the liver; for which reason the motion of a fever being too suddenly extinguished, either spontaneously or by blood-letting, and the use of such other remedies as abate the velocity of the circu-

circulation, before the said inflammatory viscid has been duly resolved, or else cast off from the body by a laudable suppuration; such a schirrhous hardness may in that case remain afterwards in the liver, and will for the future give birth to many stubborn and chronical maladies. This termination of an hepatitis has been well remarked by *Aretæus*^k, where he says, *verum si a phlegmone hepar non suppuratur, tunc non dubium fuerit, tumorem durum subsidentem in schirrhum mutari ac stabiliri; quando continuus dolor non festat, quumque adest, obscurus sentitur.* “But if an inflammation of the liver comes not to a suppuration, no one can doubt but that by settling into an hard tumour it will at length make a confirmed schirrhous; in which case there is no constant pain, or if it sometimes attends, ’tis only obscure or dull pain.” And after having reckoned up the various complaints that accompany a schirrhous of the liver, or follow after it, he says, *malorum autem colophon hydrops*: “but these complaints close in a dropsy.” But that a schirrhous of the liver is often found in the bodies of those who die of dropsy, is a truth, that will be hereafter shewn in our chapter upon a dropsy at § 1229. Sometimes the liver being rendered schirrhous acquires also an immense bulk at the same time, of which *Bonetus*^l gives an instance in a woman who having imprudently healed an ulcer that had long been kept open under the right arm-pit, she began to have a pain and swelling about the liver, which by degrees increasing brought on jaundice; and after many remedies tryed without effect, the swelling so much increased, that it obliged her to sit in a chair day and night with her right side lined downward to the earth. In the body of this man after death, the liver was found wholly schirrhous, and weighed fourteen ordinary pounds by the

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scales;

De causis & signis morbor. diuturn. Lib. I. Cap. XIII. pag.

^l Anat. Pract. Lib. III. Sect. XVI. Observ. 3. Tom. pag. 230.

scales : in the same place we are furnished with other instances of the like kind. I have myself sometimes found the whole liver juiceless in deceased bodies with a toughness almost like that of leather ; but very much contracted, or greatly diminished in its bulk. A wonderful appearance of the liver was found in the body of a dropsical woman, by the very learned physician Dr *Cornelius Henry Velse*^m ; for the whole liver, being of small bulk, was perfectly hard or rigid, and throughout the gibbous and concave surface of it was beset with rough and solid knots or tubercles, contiguous almost one to the other, each of which arising up from a broad basis, in the substance of the liver, at last ended in a round and obtuse point or tip ; but neither vomica nor schirrhous was found in the more inward substance of the liver. Nor did this unhappy woman complain of any uneasiness in her right hypochondrium, but only about the præcordia or stomach ; and the incomparable author of the remark confesses that in her life-time there was no sensible swelling or hardness that could be perceived in the right hypochondrium.

But it is easily apparent that such schirrhous tumours do, by compressing the adjacent vessels, occasion almost the same complaints that were before enumerated (at §. 918.), except that they will not advance, or come on more slowly ; because as an inflammatory swelling very swiftly increases, so that of schirrhous commonly grows up very slowly : but schirrhous indurations are oftener to be found in the liver than is commonly believed, more especially when autumnal fevers, that spread epidemically after very hot summers, are too suddenly suppressed by the peruvian cortex ; for then an icteritious colour usually remains in the eyes, and an oppressing weight is felt about the præcordia, which much increases after

^m In Dissertatione Inaugurali de mutuo ingressu intestinorum aliis machinae humanae extraordinariis Lugd. Batav. 1742. p. 43

after the stomach is filled with a meal. But if in this case the patient be not duly succoured by a speedy use of the most powerful resolvents, as (at §. 924.) we before recommended, taken in large quantities, and with a long continuance, an incurable schirrhus will ever after remain; and then such patients languish for a long time, with a waxen or jaundice-like countenance, and often expire at last with a dropsy: but when such a schirrhus has been long confirmed, and then shall be irritated either from a fever, violent or shocking medicines, strong vomits or purgatives, and the like, it by these means degenerates into a cancer, as we shewed before in our history of a schirrhus. If now you compare what was said upon the dreadful effects of an ulcerating cancer (at §. 499.), eating through all around it, with the liver itself in particular as the present seat of such a malady, it will appear plainly enough with how many tortures death must be inevitably expected. Sometimes it has been observed, that after a long continued jaundice, most tormenting pains will invade the belly, and much blood will discharge itself both upward and downward, whence a fainting, and death often ensue; but in such a case the blood-vessels of the hepatic system seem very probably to be eaten through by an acrid or cancerous ichor. *Bonetus*ⁿ relates a case of this kind, taken from *Ballonius*, in which the liver was after death found thus affected by a cancer.

But for what reasons, and under what circumstances, a perpetual jaundice may accompany a schirrhous of the liver, we have before explained at §. 918.

ⁿ Anatom. Pract. Lib. III. Sect. 17. Observ. V. Tom II. pag. 299.

S E C T. DCCCCXLVII.

FROM what has been said, then it appears that such a schirrhous state of the liver being once known by its proper signs (§. 946.) requires to be treated with the utmost gentleness and is hardly ever to be cured.

When we treated on a schirrhus, the extreme difficulty of its cure appeared even in such parts as were accessible to the hands, and to which epithems, frictions, fumigations, and the like topical application might be immediately applied; and it there also appeared with how much precaution one ought to determine whether any curative treatment of it should be undertaken; since there is so much danger lest schirrhus, especially one of long standing, may degenerate into a cancer. The utmost prudence is therefore apparently necessary in the treatment of such maladies, in which that method only can be safe which prescribes the most emollient resolvents, that exert no acrimony, nor increase the velocity of the circulating juices, as we before declared. But it also appears at the same time, that by such remedies an incipient schirrhus in the viscera may be subdued, where they can by no means be able to resolve a schirrhus of the liver that has almost acquired a stony hardness and from hence it is that *Galen* pronounces, *hepatitis autem schirrhum, incipientem quidem, saepe curavimus, inveteratum vero neque ipse sanare potui, neque alium novi, qui posset. Omnes enim ita affectos omnino sequitur hydrops. Plurimi autem longiori temporis spatio intereunt, nonnullos verò brevi perire vidimus quibus alvus multa dejiciebat.* “ We have indeed often cured a schirrhus of the liver that is incipient”

“ ent

ent; but one that is inveterate or confirmed, I have neither been able to cure myself, nor did I ever know it to have been cured by another: for a dropsy has always followed when there has been such a confirmed schirrhous of the liver: but the generality of such patients linger a considerable time, before they die; although I have known some taken off in a short time, when they have had a great flux or purging from the bowels." But it ought here to be remarked, that *Galen* does not reckon the inveteracy of a schirrhous from the number of years of its continuance, since the text even says, (ἐκταθέντα δ' εἰς πλείους ἡμέρας,) "if it has been protracted for several days;" which imports no such long space of time. But it seems very probable those who are mentioned to have been quickly carried off by this malady were such as, from the degeneration of a schirrhous into a cancer, had a drain of the acrimonious ichor into the intestines, productive of an incorrigible flux, or over-purging from the bowels, that is soon fatal.

S E C T. DCCCCXLVIII.

BUT if a slight inflammation of this kind shall occupy only a very small part in the liver, it may even then give birth to a little stone, or schirrhous knot, or a small abscess, or pustule; which of themselves can do no great mischief but with a consequent fever, they may be productive of numerous evils.

We are taught by anatomy, and more especially by the *Ruyfchian* art of injections, that the substance of the viscera, which the ancients esteemed an unorganised pulp, is a compages of small vessels; but then in parts of the human body, that have been thus prepared by injection, we are enabled to per-

ceive, by the help of microscopes, that the vessels, sending out little branches on all sides, communicate one with another, by mutual openings, which render a small obstruction formed in any part, not immediately able to intercept the whole vital conflux of juices to a part affected; but it will in some measure be supplied from the anastomosing communications of other branches from vessels that are not obstructed. But this mechanism was necessary to prevent the actions of the viscera from being immediately and greatly injured by any slight obstruction. If therefore such a little inflammation shall occupy but a small part in the liver, it can produce no great mischief, and is therefore either not known, or neglected in the cure; although it goes on to produce the same consequences in the part affected, only in a less degree, which we before observed from a violent inflammation of the whole liver. Such a little phlegmon may therefore leave behind it a small schirrhous, or sometimes a little stone, whenever the humours secreted in the liver, or the blood itself that contains the said humour to be separated from the portal branches, are much inclined to such a stony concretion, as we observed at §. 916. In turning over the writings of those who have made it their business to collect, and search after the causes of diseases in dead bodies, we observe, that they have frequently found, both in the liver and in the other viscera, such like remains of former diseases, that yet afforded no signs of their existence in the living person. The like has been also observed times without number, by anatomical professors, who have annually dissected the bodies of executed persons for academical uses. But in the mean time it is never the less true that such a hard tubercle, though small, will yet compress, and in some measure injure the contiguous vessels; but with such effects as will be not very sensible so long as the circulation continues sedate; but when the humours, more violently agitated

tated by a fever, cause a greater distention of the vessels, an inflammation will then easily form itself round the surface of such a tubercle, and spread itself through the parts adjacent, from whence many bad consequences ensue. In like manner we observe a schirrhous in the breasts of those persons who have good juices, will often lie dormant for many years, without giving uneasiness, or increasing its bulk; but when a fever, excited from some other cause, moves the blood with a greater celerity, the schirrhous is suddenly enlarged, and soon degenerates into a cancer. 'Tis thus therefore apparent enough, that for the same reasons the like causes may in the liver be productive of many mischiefs, however slight they may appear in the beginning.

S E C T. DCCCCXLIX.

LAstly, an inflammation of the liver terminates suddenly in death, if the causes of the inflammation are so violent, as to deny all passage to the humours through the whole liver, while a very intense fever is urgent at the same time; for then the whole liver being constricted in its vascular extremities, and over-dilated in its larger blood-vessels, obeys no part of its usual function; whereupon a great and sudden jaundice ensues, with a rupture of the vessels, an extravasation of the blood and bile, and a direct or speedy death of the patient. That this last way of terminating an hepatitis is about to follow, we are foretold, 1. By a knowledge of the violence of the distemper in the liver: and, 2. By an excessive and sudden loss of all the strength or powers of the body: but that it is already effected, we are taught from vomitings

vomitings and purgings of blood, with bile and fæces that appear like the lees of wine or oil, green, black, and intolerably fetid or cadaverous, violent and perpetual hiccoughs, a most intense fever, with unextinguishable thirst, and a very sudden paleness of the whole body.

We have hitherto considered the various endings of an hepatitis, either in health by a mild resolution (§. 922.) or by a concoction and excretion of the matter of the distemper (§. 923.) or by a change into other diseases, either in forming a suppuration (§. 933.) or in leaving a schirrhus (§. 946.) It now remains that we consider how the worst or most violent kind of the hepatitis may terminate sometimes in death, and that very suddenly; for thus we may be enabled to apply directly the most powerful relief; or if the malady exceeds all the powers of art, the physician may at least be able, by the observed signs, to know and foretel the speedy fatality that is about to happen, and thereby keep his character clear of imputations. For this reason *Hippocrates* ^p advises physicians to apply themselves diligently to form the prognoses of diseases, since no one can pretend to cure all patients; *Sic enim omnes eum merito admirabuntur, & medicus optimus censebitur. Namque & eos, qui servari possunt, multo etiam melius servare poterit, ex longo tempore singula praemeditatus, & eos, qui tum obituri mortem, tum evasuri sint, si praeviderit, praedixeritque, omni prorsus culpa vacabit.* “ For
 “ that this will deservedly make all persons admire
 “ him, and esteem him a great physician: and for
 “ that by this means he will be much better able to
 “ preserve those that are recoverable, having for
 “ some time beforehand premeditated upon all the
 “ circumstances; and in the worst events he will
 “ keep clear of all blame, if he foresees and foretels
 “ which

^p In Prognostic. initio. Charter. Tom. VIII. pag. 583, &c.

“ which patients will expire, and which of them
 “ will recover.”

Therefore when the inflammatory matter, impacted into the streights of the smaller vessels, has the utmost tenacity, and abounds enough to block up all the said vessels, while at the same time the blood is violently urged into the obstructed parts by a fever, the whole liver becomes swelled, and all its biliferous ducts are so compressed, as to intercept the passage of the gall to the intestines, from whence a jaundice-colour is suddenly transfused all over the body. But since the liver is a part so tender or friable, composed of vessels that are soft like a pulp, those vessels, being over-distended, cannot long bear the violence without bursting; whereupon all the humours extravasate into the capacity of the abdomen, and sudden death ensues. And again; as in this case there is a stop to all the vital influx by the arteries, and efflux by the veins, a present gangrene is induced (§. 419.), which soon corrupts all before it. But such a violent and suddenly fatal hepatitis very rarely happens, unless the inflammatory viscid, being fused and put in motion by a fever, is suddenly thrown upon the liver, so as to stop up all its vascular compages at one and the same time. Thus *Hippocrates*⁹ observes, that sometimes so severe an hepatitis follows from a conflux of atra bilis upon the liver, that the patient suddenly expires of it. Such a sudden rupture of the vessels, and profuse hæmorrhage in an hepatitis, seems likewise to have been feared by *Aretæus*^r; for thus he expresses himself, *Sanguinis utique profluvia ex hepate omnium maxima fiunt: venarum enim radicatio (est): neque in ipso valida phlegmone haud ita frequenter, neque in partibus magis præcipuis oritur, homo enim vita excedens prævenit.* “ Bloody-fluxes are more profuse
 “ from

⁹ De Internis Affectionibus Cap. xxix. Charter. Tom VII. pag. 659.
^r De causis & signis morbor. acut. Lib. II. Cap. vii. pag. 19.

“ from the liver than from any of the other viscera; for it is the root of the veins; nor is it so unusual for it to be invaded by a violent inflammation; nor can a phlegmon arise in a part of greater consequence, since it snatches a patient out of his life before he is aware of it.” And soon after he again subjoins, *Si vero a majori causa, plaga vel continuis corruptionibus multorum vitiosorumque ciborum, ebrietate, vehementi refrigeratione, phlegmone in portis jecoris fiat, celerrima perniciēs.* “ But if a phlegmon arises in the portæ or gates of the liver, from a more violent cause, as a blow or contusion, a perpetual corruption of the aliments, either from gluttony or their vitious quality, or from drunkenness, or an abuse of intense cold, the malady is very speedily fatal.” For thus if the fat of the omentum be profusely melted down, and violently impelled into the liver by the sultry heats of summer, or violent exercises of body, being unable to gain a free passage through the least vessels, it will obstruct the final straits of the venæ portarum, where, by a rupture of the vessels, it may cause sudden death. This fatal event is sometimes experienced in the horned cattle that are over-fed for fattening in the richest meadows in the sultry heats of summer; for they often begin to lose their strength, with a sudden oppression or anguish, then turn giddy, with a yellowness of the eyes, and soon after falling down dead, their belly has been found full of blood. In horses likewise, more especially of the fatter kind, which after long idleness are put to sudden and violent running, the same accident does frequently happen; and in like manner an extravasated blood, and sometimes a quantity of oily or melted fat, amounting to several pounds, have been found in the capacity of the belly. But the signs of such a fatal ending of an hepatitis are,

1.] As for example, if a person that is atrabiliary, or very fat, undergoes much exercise in the hottest

hottest season of the year, by which the long stagnant and collected humours are put into motion; or if such a person, after violent exercise of body, bathes suddenly in cold water, we then know that such causes have preceded, as may give a reasonable occasion for us to fear such a malady. If then there follows after these a sudden and great anguish from the blood being refused a passage through the *venæ portarum* in the liver (see §. 631.), while the right hypochondrium is raised into a swelling, the eyes begin to turn yellow, and a violent fever arises, we then know that this most dangerous malady is already begun.

2.] The signs here enumerated teach us, that either the blood-vessels, being ruptured, extravasate a great quantity of blood, whereupon that very sudden and excessive loss of all the strength is observed, with a great paleness spread hastily through the countenance; or else they denote that a spreading gangrene is now corrupting all around it. Sometimes the vessels of the liver being ruptured, pour out their blood into the capacity of the abdomen; at other times the same blood is detached from them into the stomach and intestines, and is from thence expelled either upward or downward. A remarkable case of this kind is related by *Vesalius*^s, in a celebrated counsellor at law, who had long laboured under a lingering hypochondriacal malady; who being questioned by *Vesalius* concerning the state of his health for the space of the year that was past, received for answer, that it was an obstruction about his liver, and made a promise to that professor to come the next day to his anatomical administrations, that were to be upon the viscera of the abdomen, that he might have a better idea of his own malady; but within a few hours, on the same day, at supper, he suddenly complained of a wonderful weakness of body, with a difficulty of breathing, and soon after expired.

^s. In *Epistola de rad. Chinae* Tom. II. operum, pag. 674.

expired. *Vesalius* enquiring the next day after the cause of so sudden a death in the body of the deceased, found that all the blood of the body, as yet warm, was poured into the capacity of the peritonæum, from a rupture in the trunk of the vena portarum; the liver was all white and beset with tubercles, the whole anterior and left sides of the liver were also hardened like a stone; but the back part of it, where the vena cava coheres with it, appeared soft and corrupted. But if at length a rupture of the vessels may be occasioned in such chronical or slow diseases of the liver, are we not much more to fear the same effect from a sudden infarction of the liver throughout its whole substance, while the blood is violently urged into the obstructed vessels by an acute fever? *Hippocrates*^t, in his epidemics, relates such a case as serves to teach us this; for *Chartadus* had an ardent fever, with a plentiful discharge of bile both upward and downward, while a round swelling was observed about the spleen, affording a sign that the passage of the blood through the liver from the spleen was impeded. Upon the same day blood was discharged by stools to the quantity of a gallon, at several times: there was also a second, and a third discharge of the same kind, which last brought away many clots or grumes of congealed blood; but there was anxiety or oppression about the heart, that afterwards increased, to which succeeded faintings and a delirium. In the evening there was great restlessness of body from the anguish; the feet were cold, the head and breast hot, and at the approach of death ran down with weak sweats; but at last, having said that he wanted to ease himself by stool, with dejected eyes he soon after expired. Whoever considers all the symptoms or appearances of this case, will not doubt but the patient laboured under a severe inflammation of the liver, and that by a rupture of the vessels he perished with a profusion of blood in the stools. From hence

likewise,

^t Lib VII. Aegrot. XIV. Charter. Tom. IX. pag. 558, 559.

likewise, in his coan prognostics^u, he pronounces, *Sanguinem splendidum dejicere, malum est, tum alias, tum si quis dolor adfuerit.* “To discharge shining or pure blood, is a bad sign either with other symptoms, or with a griping.” And again^w, *Lethale autem & album sanguinem dejicere, multa grumosa dejectiones item album & liquidum cum ventris tumore.* “But it is a fatal sign to discharge blood by stools, in which a great deal of it is thrown out congealed or in grumes; so also white liquid stools, with a swelling of the belly, are fatal.” But here we are to observe, that these white and liquid stools, with a swelling of the belly, denote that the bile pass’d not into the intestines, and that therefore the distemper is lodged about the liver.

From hence it also appears, why *Hippocrates** condemns a vomiting of blood with a fever.

But when filth of a cadaverous or most fetid smell is discharged by stools, with a most intense fever, and unextinguishable thirst, we know for certain that an inflammation of the liver is begun to change into a gangrene, and to corrupt this whole ample viscus with a putrefaction of the worst kind. But that a perpetual hiccoughing is in this malady to be esteemed one of the worst signs, was before demonstrated from *Hippocrates*, in passages cited from him at §. 615: but an hiccough may also arise from the quantity of evacuated blood, as we before remarked upon another occasion at §. 659. *Aretæus*^y gives us most of these worst symptoms which attend an hepatitis that inclines to be suddenly fatal, where he says, *Ignis nimis profundus, obscurus, acer, pulsus torpidi, doloris species varia omnis generis: nonnunquam enim dextra parte defigitur, adeo ut acutum telum adactum esse videatur; interdum torminibus similis est: rursus vero interdum dolor cum summa gravitate conjungitur, atque inter dolendum prostratio virium & vocis privatio, &c.* colore

^u No. 605. Charter. Tom. VIII. pag. 888. ^w Ibidem, No. 1. ^x Aphorism 37. Sect. 7. Charter. Tom. IX. pag. 311. De causis & signis morbor. acutor. Lib. II. Cap. vii. pag. 19.

colore ex atro viridi infecti sunt, plumbeo quasi, &c. magna est in corpore segnities, extrema frigent, tremor adest, horrores, singultus inanis convulsivus, icterus, mera bilis, totum corpus bilioso colore perfunditur.

“ For here there is a deep sense of burning or heat,
 “ either violent or obscure, a slight throbbing, with
 “ a various sense of almost every kind of pain; for
 “ sometimes the pain is fixed in the right side, so as
 “ to resemble the piercing with a sharp dart; some-
 “ times it is like the gripes: but sometimes again
 “ the pain is conjoined with the utmost oppression;
 “ and while the pain continues, there is a loss both
 “ of the strength and of the voice, &c. the whole
 “ surface of their body is tinged of a greenish or a
 “ sort of leaden-colour, &c. there is a great sluggish-
 “ ness or indisposition to exercise throughout the
 “ body; the limbs are chilly, and tremble with shi-
 “ verings; an empty convulsive hiccough, a jaun-
 “ dice, and a transfusion of mere bile, which tinges
 “ the whole body of a bilious colour.”

S E C T. DCCCCL.

FROM all particulars that we have hitherto explained, relating to disorders of the liver (§. 914 to 650.), one may be able to understand an infinite number of symptoms which present themselves in acute diseases, whose origin or production being not known, has given birth to fabulous and empty names of malignancy; for upon the liver depend all the viscera of the abdomen; and consequently all their actions of digestion, assimilation, nutrition, recruiting of the blood, and discharge of the intestinal fæces, answer to the state of this viscus. In the liver we observe a threefold humour, very easily disposed to putrefaction by heat, a
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great quantity of dissolved blood with the hepatic and the cystic bile: we observe a great vicinity betwixt the liver, diaphragm, and heart; and when the bilious extremities of the portal vessels are obstructed, the bilious blood or liquor of the portal veins easily passes into the vena cava. And from those principles alone one may perceive how many and how different species there are of the jaundice? Under what circumstances, and for what reasons, it may be sometimes easily cured? And why it is often so extremely stubborn of cure? Why it often kills very suddenly, or very slowly? Why it invades, continues, goes away, and returns again repeatedly at several times? Why its appearance is often ushered in with such anxieties, vomitings, pains, and convulsive motions preceding; afterwards grows dormant, and then returns again? and what we are to expect, as denoted in such a case? Why in acute or febrile distempers a jaundice is so bad a disaster, appearing before the seventh day of the malady? and why it is so incorrigible after the seventh day? why it is so well removed by a copious dysentery that speedily terminates? Why blood-letting gives so little relief in these maladies? Why in all acute distempers it is so necessary to give due attention to pains, swellings, and risings backward or upward of the hypochondria? Why the colour of the eyes and of the urine, give such early notice of the invasion and retreat of a jaundice? Why an inflammation, suppuration, gangrenous, schirrhous, or cancerous disorder in the spleen, stomach, omen-

tum, mesentery, or intestines, does always so much affect or greatly injure the liver itself? And why, on the contrary, all inflammatory or schirrhous disorders of the liver, so egregiously afflict those several parts? Why the liver is liable to swell and enlarge to so monstrous a bulk, and may again grow dry, or shrink up? Why a dropsy follows from a distempered liver, or a tympany, that is still more dreadful? Why in a dropsy the liver so much dwindles away, and dries up, while the spleen grows bigger? What the nature is of an hepatic dysentery? with almost an infinite variety of other problems relative to these matters.

We come now to some practical deductions, or corollaries that follow from what we have before advanced concerning an hepatitis, and which afford us great light both in the knowledge and cure of most distempers.

Symptoms, of a production unknown, &c.] In acute fevers physicians have observed more especially a twofold difference; for either they have been attended with great violence of the circulation, and intense heat of the whole body, a short and quick breathing, with a quick, strong, and large pulse of the artery; and here all things seem highly serviceable, which conduce to lessen the motion and quantity of the blood or humours, as phlebotomy, diluents, nitrous medicines, &c. so that by art these fevers have been happily cured, although they at first invaded with the utmost violence. But we observe also another worse kind of acute fevers still more dangerous, in which the powers of the body are suddenly and much weakened; but the heat being here much less, is often attended with a chilliness of the limbs, and great oppression or anguish; the
pulse

pulse very quick, weak, and unequal, often vanishing so as to be imperceptible under the finger of the physician, and the thirst is often little or none at all. These fevers, from the sudden weakness of the powers, which they bring even upon the strongest persons, without any apparent discharges, have not without reason been denominated malignant, by the most experienced physicians. Now repeated observation in these fevers has taught us, that such remedies prove useful as raise the depressed powers, or at least excite the juices to motion by an aromatic stimulus; whence scordium, rue, angelica, and the like vegetable substances that have gained the title of alexipharmics, are administered in such fevers with the most desirable effects, provided they are given in great plenty of a watery drink or infusion, to be drank warm, with the addition of a little wine or vinegar: for when the body has been well filled with these, a moderate sweat usually breaks forth, by which the vital powers of the body are increased, while the epidemical miasma, or vapour, that produced the whole malady is often expelled from the habit. But when this method of cure has been used in the former kind of inflammatory, or ardent fevers, where there is a great heat and thickness of the blood, all the symptoms have been rendered much worse, and the patients have thereby been exposed to the utmost danger. For this reason *Sydenham* so strenuously opposed both the term and treatment of malignity in fevers, which the physicians of that day abused and applied to all bad fevers, even to the inflammatory ones, as we before observed at §. 736; for in consequence of this empty term, they destroyed many patients by the hot regimen, with excessive sweats, who might otherwise have been recovered by a more temperate method of cure.

But since an inflammation of the liver is often attended with great anguish or oppression (see §. 631.) and as all the functions of the several viscera in the

abdomen must either be impeded or much disturbed, from the free course of the blood obstructed through the portal veins of the liver; there will be therefore sometimes a great weakness of the vital powers from the corrupted bile that in this case often lodges itself about the præcordia or stomach (see §. 661.), from whence some have unskilfully treated such an inflammatory hepatitis as if it were a malignant fever, of the kind above described, and not without the highest damage to the patient: but a diligent observation of the causes of an hepatitis (§. 916.) and of its effects (§. 918.), which are also the demonstrative signs of the present malady, will allow no circumspect physician to fall into such a mistake.

In the liver, a threefold humour, &c.] The bile is known to be one of the sharpest or most lixivial juices inhabiting the body, very speedily putrefying²; and the blood of the venæ portarum contains the immediate matter of this soapy fluid; but the bile retained in the blood has the power of melting or dissolving its texture, insomuch that after a long continued jaundice, the blood too much relaxed and fused by the intermixed bile commonly ends in an incurable dropsy. Moreover the venal blood returning from the stomach and intestines, contains in it the most fluid parts of the alimentary bile absorbed by the mesenterical veins; the blood going from the spleen to the liver, by the splenic vein, is extremely thin and dissolved; and the venal blood from the omentum contains in it much of the roscid moisture absorbed from the capacity of the abdomen, into which it exhaled from the arteries; from all which the reason appears, why the blood of the venæ portarum is so thin and dilute, notwithstanding it is now become venal, after having lost much by the arterial secretions; for every thing duly considered, this blood seems to return with more thin juices to the liver, than it first carried when it was arterial. Such blood,

² H. Boerh. Institut. Medic. §. 99.

blood, stagnant in the large trunk, and branches of the *venæ portarum*, while the liver itself is obstructed, being lodged in so warm a place, continually shook by the respiration, and charged with the immediate matter of the bile itself, that is so apt to putrefy, must of course be thus very easily corrupted; and for this reason we observed, that laudable matter is seldom formed by a suppuration in the liver (see §. 933.), and that a fatal putrefaction is much rather to be feared.

The great vicinity of the liver to the diaphragm, with the heart.] How large a surface of the liver is covered by the diaphragm is well known from anatomy; inasmuch that the right side, or half of the diaphragm is by the contiguous liver thrust higher up into the capacity of the thorax than the left^a. Moreover the whole surface of the diaphragm that lies next the abdomen is covered by the peritonæum, except about the vena cava, where the liver is naked to its contact^b. It cannot be therefore any wonder if disorders of the liver often affect the diaphragm to which it is annexed, as we shewed by an example at §. 936, No. 5.

But the liver has likewise a very great vicinity to the heart itself; since betwixt the liver and the pericardium, that includes the heart, there is nothing interposed but the thin tendinous part of the diaphragm. And again, the lower vena cava, that opens into the heart, is rooted into the liver; from whence emerging through the diaphragm it immediately after forms the right venal sinus; from which is apparent, that violent distempers of the liver must likewise injure the incumbent heart.

Bilious extremities of the portal veins obstructed, &c.] For whatever juices flow through the *venæ portarum*, have from thence a twofold exit, either through the secretory canals into the hepatic pores

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and

^a Albin. Hist. Muscul. Lib. III. Cap. LXXXI. pag. 300. ^b Ibi-
m. pag. 308.

and ducts, or else through the final extremities of the venæ portarum into those of the vena cava, by whose branches spread through the liver it goes on to the trunk of the cava, that opens into the right sinus, and capacity of the heart. But since the hepatic bile, secreted from the blood of the venæ portarum, is a fluid much thinner than the blood itself; it is therefore easily apparent, that if an obstruction arises to its course through the bilious canals, the said bilious juice will return and go together with the blood through the vena cava, so as to infect the whole mass of circulating fluids with a bilious cacochymia. 'Tis true indeed these bilious canals, that convey away the bile as it drains or secretes from the blood of the venæ portarum, are not very easily obstructed, but from a violent cause, since the fluid has a motion through them, from a less to a more largely opening part of the vessel; but then it meets with a much smaller light or passage through the entrance of the common duct into the intestine called duodenum, where obstacles often oppose its exclusion. Again, we before observed that the bile, and even the blood containing the immediate matter that forms the bile, are very much inclined to run into calculous concretions, which being once formed, and daily enlarged, may easily block up these passages. Finally, all sorts of tumours seated in the liver, whether inflammatory, suppurative, schirrhous, steatomatous, or the like, may produce such an obstruction by compressing the adjacent parts that lie contiguous. See also what has been said upon this subject at §

119.

But as by an obstruction of the biliary tubes the matter of the bile is obliged to pass into the vena cava, so likewise an obstruction in the final streights of the venæ portarum, rendering the blood's passage difficult into the cava, may sometimes probably so dilate the biliferous ducts or tubes, that they will give admittance to the red blood, to pass through them in

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a considerable quantity to the duodenum, from whence it may be expelled both upwards and downwards out of the body. Such a difficult passage of the blood through the final streights of the venæ portarum, into the branches of the cava, is the most frequently and powerfully occasioned by an atrabiliary tenacity; and cases of this sort seem to have occurred often to myself, in the course of a long practice, and almost constantly in lean persons of an atrabiliary temperature; more especially in such of them as have abused their constitution by profuse spittings in the smoaking of tobacco, which fluid ought otherwise to have been again returned into the blood from whence it was separated. Thus I visited a man, who after great anguish about the præcordia, and a troublesome heart-burn had a vomiting of blood, which was soon followed with a copious discharge of blood, likewise by stools, whereby he expired in a few hours. Together with some friends skilled in anatomy, I made a diligent scrutiny into all the abdominal viscera of this deceased person; and yet we were not able to find one broken vessel, nor any very apparent defect in any of the viscera. I have seen other cases of the same kind, but without their being fatal; but most of them have afterwards recovered and lived in a tollerable good state of health, even though they have been sometimes so far exhausted of blood by the profuse evacuations, as to fall into convulsions from the sudden emptyness of the blood-vessels. But it is easily apparent these cases must always be dangerous, although many may recover after such bloody vomitings and purgings. In all those patients the bloody vomiting has been preceded by a troublesome tightness about the abdomen, and they have been afflicted with a lasting heart-burn, more especially upon filling the stomach with food; but we before observed, in treating upon febrile anguish, that when the obstructing matter may be lodged only in the liver, yet the principal sense of the complaint is by

the patient perceived about the upper orifice of the stomach; and, therefore, 'tis concluded, that symptom confirms us in the present opinion: but those patients seem here to recover, who have a discharge of blood into the duodenum, not from any broken vessels, but from an over-dilatation of the biliary tubes; by which means the obstructing matter that lodged in the final streights of the *venæ portarum*, being free from the pressure of blood behind, is by the lesser vessels urged back again into the larger trunks (see §. 140, and 400.), and the obstruction of the liver becomes thus happily resolved.

Observing cases of this kind in the course of my practice, I began thence to understand the reason why *Hippocrates*^c should pronounce, *quicumque sanguinem vomunt, si quidem sine febre, salutare: si cum febre, malum. Curare oportet refrigerantibus & adstringentibus*. “ That a vomiting of blood is salutary
 “ in those patients who have it without a fever; but
 “ if it be joined with a fever, 'tis a mischievous sign.
 “ Its cure is to be attempted by refrigerants and a-
 “ stringents.” Such remedies I have here indeed used with the most desirable success, that the dilated, and over-strained vessels might be restored to their former strength, or due firmness; it is also of good use here that much blood being evacuated, gives the vessels an opportunity to contract themselves spontaneously; because in such weakened persons the vessels are both less filled, and the fluids are more slowly moved. There is yet another remarkable passage in *Hippocrates*^d that seems relative to this case, *quibus dolores hypochondriorum, cardiae, hepatis, partium circa umbilicum, excreto sanguine (per alvum dejecto forte) servantur, non autem excreto, moriuntur*.
 “ Those patients who have pains of the hypochon-
 “ dria, cardia, liver, and parts about the navel, re-
 “ cover if they have a discharge of blood (by stools
 “ doubtless);

^c Aphor. 37. Sect. VII. Charter. Tom. IX. pag. 311. ^d Coac. Praenot. No. 296. Charter, Tom. VIII. pag. 868.

“doubtless); but if they have no such discharge the
“malady is fatal to them.”

How many, and how different kinds there are of the jaundice?] What a jaundice is, and how it is to be discovered, by the change of colour, which it introduce throughout the body, and more especially in the white parts of it, we before declared at §. 918. But it always supposes either an impeded secretion of the bile from the blood of the *venæ portarum*, or else an obstacle to the free discharge of the bile into the intestine of the duodenum, after it has been secreted. The first difference therefore of the jaundice will depend upon the bile, whether cystic or hepatic, or both, that regurgitates, or is refunded back into the blood; and then again it may vary according to the particular and diverse disposition of the bile itself, with its colours, and other very numerous circumstances.

But there is a great variety of the jaundice, in respect to the causes which either impede the secretion of the bile in the liver, or obstruct its discharge thence into the duodenum; for in what we before proposed it appeared that this cause might sometimes be an inflammation, and that even in various degrees; and then it appeared that the like jaundice might arise from a suppuration consequent on an inflammation, or else that arising gradually with an incipient inflammation, it might continue on to become inveterate. But we have also reckoned up divers kinds of the jaundice, according to the different ways or outlets by which the collected matter in the liver may take to discharge itself. Lastly, that a schirrhus either benign or indolent, or one that has begun to degenerate into a cancer, has given birth to the disease we call a jaundice. If now we again consider the various organs and parts that lie contiguous, and near about the liver, more especially at its hollow or concave part, it may thence sufficiently appear what a manifold idea we are to entertain of the jaundice,
which

which being a distemper only under one denomination, may be so produced by most different causes; an accurate knowledge of which causes is however of use to direct the proper method of cure, as also to form a just prognosis whether the jaundice may be cured or not, and with ease or with difficulty.

Why? and when, the jaundice is sometimes easily cured?] We often meet with such kinds of the jaundice as are easily or speedily cured, when the productive cause is but slight, or when the obstacle impeding the free discharge of the bile, removes of its own accord, or at least easily submits to the use of remedies. Thus, for example, a jaundice arising from a more slight inflammation of the liver, curable by a mild resolution (§. 922.), or by a concoction and excretion of the morbid cause (§. 923.) yields easily to the proper treatment. So likewise, in women big with child, when a jaundice arises from a compressure of the cystic, or of the common biliary duct, by the tumefaction of the enlarged womb, or from hard fæces collected in the large colon under the liver (see §. 918.); in those cases, the foetus being delivered, and the fæces evacuated, the malady ceases spontaneously. We often observe a jaundice of this sort in new-born infants, that proves easily curable; for during the time that the infant lies dormant in the womb of its mother, it exerts no motion of respiration upon the viscera contained in the abdomen, from whence the bile is largely accumulated in the gall-bladder: the tract of the intestines also is covered with a very thick and viscid mucus, and a large quantity of meconium or tough greenish fæces, usually distends them; and from thence the exit of the bile into the duodenum is often intercepted; whence, by easily dilating the biliary vessels in the liver, it returns back again into the blood, and there causes a jaundice. Sometimes likewise the same obstruction of the bile into the duodenum, and its consequent jaundice, will arise in new-born and

sucking

sucking infants, from the curdy or cheele-like coagulum of the first milk lodged in the duodenum. And in this case, if a scruple of Venice-soap be dissolved in three ounces of water, and mixed with an ounce of the syrup of rhubarb; a spoonful given several times in the day will dissolve the concrete, gently and gradually scour the sides of the intestines, and expel their offending load, so as to cure that jaundice in a short time. Even sometimes in more adult persons, a jaundice shall arise from such a load of phlegmatic matter lodged in the first passages; but when such viscid crudities have been first resolved or rendered fluxile by attenuants, they are afterwards easily evacuated by vomitives or purgatives; upon which subject you may consult what was said upon the cure of spontaneous and glutinous viscid, at §. 69, & seq. Even *Hippocrates*^e tells us of such a jaundice arising from phlegm, and has pronounced it to be not fatal, but easily curable. Sometimes, again, the bile, by long standing in the gall-bladder, thickens into a viscid that cannot easily pass out from it in persons studious and addicted to a sedentary or unactive life: and in that case *Galen*^f has remarked, that the gall-bladder suffers the same effects as are observed in the bladder of urine, from too long a retention, namely, that it becomes after a manner paralytic, so that it cannot conveniently evacuate or press out the bile that is now inspissated. In those patients a jaundice arises without a fever, but with a certain urgent sense of heaviness in the right hypochondrium: and *Galen* assures us, that after the use of aperients, he has often cured such patients, by the use of a chologog or hepatic purgative, in one day's time. But if the malady, being somewhat more stubborn, refused so readily to yield, he then gave more powerful aperients, with stronger purgatives after

^e De Internis Affectionibus, Cap. XL. Charter. Tom. VII, pag. 666. ^f Lib. V. de locis affectis. Cap. ultimo. Charter, ibid. pag. 504.

after them; by which a bilious matter, rather greenish than yellow, being evacuated, a speedy cure happily followed.

Why a jaundice is often so extremely stubborn?]
Namely, whenever the productive cause is so confirmed, as to be very difficultly, or not at all, removeable; or, whenever the structure and substance of the liver itself are so changed and corrupted by the disease, that for the future it can no longer perform the necessary secretion and excretion of the bile. The celebrated writer on consumptions, Dr *Bennet* ^g, found the neck of the gall-bladder stuffed with tophous or chalkey matter, in an icterical deceased body that was opened; but surgeons well know the difficulty of resolving tumours that are once become tophous or indurated, even in parts that are freely accessible to the hand: but the gall-bladder in this subject was distended with a pellucid and insipid serum, which hardened over the fire like the white of an egg; from whence it was evident the secretion of good bile was now abolished in the patient. The cystic duct has also in these cases been found perfectly closed or concreted together, insomuch that a probe, passed through the opening of the common biliary duct, could by no means be made to enter into the cystic duct, and its gall-bladder, which although filled with bile to the size of one's double-fist, could not be made by pressure to send out one drop of bile; and even after the gall-bladder was divided through its middle, there appeared no distinguishable remains of any opening through the cystic duct from the cavity of the bladder ^h. Sometimes again, although the passage from the gall-bladder remains open enough to the duodenum, yet the structure or substance of the liver, is so far degenerated or corrupted, as to render the distemper equally incurable, as the celebrated *du Verney* ⁱ the younger

^g Tabidor. Theat. pag. 58.

^h Medical Essays, Tom. II.

No. XXI. pag. 310.

ⁱ Academie des Sciences l'annee 1701,

Mem. pag. 193.

younger has shewn us in the following observation: In the body of a virgin thirty years old, deceased of an ascites, or dropfy of the belly, that followed a jaundice, the liver was found of an obscure yellow-colour, and, through a great part of its substance, dried up; the gall-bladder was dilated into a large bag, that tore open with a small force, and contained a great quantity of hydatids or watery vesicles, together with a mixed matter, partly glutinous, in part lymphatic and bilious, and in part of blackish grumes, which being bruised betwixt the fingers, tinged them of a yellow-colour: but the opening of the bilious passage, as far as the duodenum, was so ample as to admit the little finger with ease, whence there was a very free course allowed for the contents of the gall-bladder to pass into the duodenum; and the nurse, who attended the patient in the course of her distemper, gave assurances that all the like substances were expelled by stools in her life-time, as appeared to be found in the gall-bladder after her death. From hence therefore appears another cause of obstinacy in a jaundice, from a morbid degeneracy in the substance of the liver, although the large biliary passages remain sufficiently open. From what has been said likewise, it is apparent enough, that a jaundice arising from a schirrhus of the liver, must be one in the last degree stubborn.

Why a jaundice often kills very speedily, or very slowly? When an atrabiliary matter, that has been collected in the other viscera, becomes dissolved, acrid, and thrown suddenly with a febrile violence upon the liver, a speedy death ensues; which is also the consequence when the liver has an inflammation so violent as to break open its blood-vessels, or cause a spreading gangrene, that soon corrupts the whole substance of the liver in a putrid pulp, as we shewed under the foregoing aphorism. But when an abscess or ulcer is once formed in the liver, if it does not point or shew itself outwardly, so as to admit of being

ing opened, death is then as certain, although more slowly the consequence (see §. 937.). But the jaundice is much more chronic or lingering, when it proceeds from a schirrhus, from calculous concretions, or from an atrabiliary tenacity of the blood slowly collected in the liver. I had the care of a woman of threescore, who had laboured under the jaundice for twelve years; at the beginning of which space it went and returned by periods, but for the last year it remained continually on, and had tinged her whole body almost of a black colour, only her eyes were left with the appearance of a most intense yellow, insomuch that the unhappy patient struck horror into all that saw her. By a long continued use of the juice of grass with the whey of milk, and the like, in the spring season, followed with a course of the Spaw-waters during the summer months, and a great quantity of Venice-soap given with honey in the winter, the matter impacted in her liver began at length to relent and dissolve, and a purging came on her that held for six months, with a relief to all the symptoms; for the stools brought away a clay-like matter, extremely fetid, and always replete with small rough granulations of calculi. Thus by keeping up her strength with a suitable diet, assisted with all the helps that wealth could afford, she recovered from so obstinate a malady, and has lived for some years after it, in a tolerable good state of health. 'Tis true she very constantly adhered to the course of her cure, during two whole years, which is what physicians can very rarely, by any intreatments, obtain from their patients in such cronic or lingering cases: and I the more wondered at the patient courage of this old lady, as the first eighteen months wrought but very little advantage by all those assistances of art, and was in the mean time often persuaded by her friends to throw up so tedious a course of medicines, for a quiet expectancy of death, which seemed so much here to be the only and sure remedy.

Why

Why a jaundice goes and returns, &c.] Such kinds of the jaundice do often occur in practice, as being at first slight, go off and return again after long intervals; and then as the malady gains more upon the liver, these temporary kinds of the jaundice return sooner, and afflict either more violently or longer. These kinds of the jaundice are in their beginning often not easily distinguished by the less knowing, or the less attentive physician, since after a slight cardialgia, and anguish about the præcordia, the patient will upon the next day have a yellow appearance in the eyes, and discharge an higher coloured urine, and then they seem to be very well again, until after some months, sooner or later in some persons than in others, there follows a sudden return of all the same symptoms. Now as here all the troublesome uneasiness leaves the patient, when the yellow colour of a jaundice begins to shew itself in the eyes, therefore many physicians have been wrongly induced to believe this a critical or salutary jaundice. Even Sydenham^k seems not well to have understood the cause and nature of our present malady; since he describes it under the denomination of an hypochondriacal, or hysterical colic, in the following terms: *Regionem ventriculi, nonnunquam & paulo inferiorem, dolor haud mitior, quam in Passione Colica Iliacave primum obsidet, quem vomitiones sequuntur enormes, nunc viridis materiae, nunc vero flavae. His accedit (quod saepe observavi) major animi dejectio desperationisque, quam in morbo alio quocumque. Post diem unum alterumve facessit dolor, qui post paucas septimanas revertitur, nibilo lenius saeviens quam antequam solveretur paroxysmus. Iterum quandoque satis spectabilem comitem sibi adsciscit, intra dies pauculos sponte evanescentem.* “A pain hardly less severe than that of the colic or iliac passion, first invades the region of the stomach, and sometimes extends itself to a small distance below; which pain is next fol-
 “lowed

^k Sect. IV. Cap. vii. pag. 267.

“lowed with enormous or excessive vomitings, of
“a matter that is sometimes green, or sometimes
“yellow. To these vomitings are joined, accord-
“ing to my repeated observations, a greater low-
“ness, or dejection of the spirits, and despair of
“the mind, than I have known in any other dis-
“ease whatever. After a day or two the pain goes
“off, and returns again after a few weeks, and rages
“with no less severity than before the first paroxysm
“went off: it conjoins itself with a jaundice that is
“sometimes apparent enough, and which disappears
“spontaneously within a few days after the fit.”

Now this description is most exactly conformable to our present malady in its adult stage; for it almost constantly begins first with slight attacks, tinging the whites of the eyes with only a faint yellow that is perceiveable only by the day-light; for with the light of a candle all things that are faintly yellow appear white; but even in the very first attacks of this distemper, there is always a very conspicuous degree of yellowness in the urine. As I have had frequent opportunities of seeing this distemper, it may be of use to our readers if we give a description of it that is still more particular.

It is seldom to be met with in young persons, but oftener invades those who are full grown, and inclining to old age; more especially such as are afflicted with long continued grief, or are by day and night perpetually meditating upon the anger and affronts of others; but above all persons it invades those most who are given up to a sedentary life (whence men of letters are often the subject of it), and those who feed richly, and after having filled their stomach sit idly inclined to the table, by which posture of body all the abdominal viscera are compressed. They begin first to complain of a troublesome tightness about the præcordia, with a sensation like that of an oppressing weight; for some hours after feeding there is a sharp heart-burn, or pain of the

the cardia, which I have sometimes known to have held the patient several months before a periodical jaundice of this kind. There is next observed a slight yellowness in the greater corners of the eyes, the urine is somewhat higher coloured, and bilious excrements are deposited by stool: afterwards a sudden and unexplainable anguish arises, without any apparent cause foregoing, with an intollerable pain about the cardia, and sometimes even throughout the whole abdomen, whence it is often believed to be the pain of a colic, or iliac passion,; and lastly, a fever adjoins itself with enormous vomitings; but when these symptoms have continued some hours, they abate or go off, and leave the body all over tinged with the colour of a jaundice. In some persons I have seen that the first attack of the malady has only tinged the face and breast of a yellow colour, without affecting the other parts of the body; but then the urine is died with a most deep yellow, and the patient finds no other material complaint; yet there are some who have a troublesome pain in their back and loins, and sides, before the yellowness appears, which is a circumstance that *Hippocrates*¹ seems to have observed, when he says, *quibus lumborum ac lateris dolor sine manifesta causa, icte: ici fiant.*”

“ Those who are invaded with a pain of the side, “ and loins, without a manifest cause, become icte- “ ritious.” After twenty-four hours times, sooner or later, these patients find themselves seemingly well, and perceiving no more of their intolerable anguish, and pressing weight about the præcordia, assure themselves of gaining perfect health in a short time: their urine accordingly grows by degrees less and less coloured, the yellow colour goes off every day more from their skin, so that a few days being elapsed there seems to be nothing more of their distemper remaining. And in some I have known an intolerable itching attend the whole time that the

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skin

¹ Coac. Praenot. No. 325. Charter Tom. VIII. pag. 870.

skin has continued suffused with the bile. But after some weeks, or even months, are past, the whole train of those complaints return again in the same order; and after the patient has been several times thus attacked, the jaundice at length remains perpetual, being sometimes worse than at others, but never attended with the violent symptoms that joined the first attacks; the icteritious colour is now very intense, and diffused all over the body, even the saliva itself (which is an observation somewhat rare) has a bitter taste, and at length in process of time the whole body looks almost of a black colour, the ancles or legs begin to swell more and more, and finally the abdomen filling with water takes off the patient by a dropfy.

Sometimes the attack of this malady is so violent, and the conjoined fever so intense, that a true inflammation of the liver ensues, and sometimes ends in a speedy death; sometimes also a supuration of the liver, that has been shewn to be so extremely dangerous, will follow, like the case that is given us in the *Edinburgh Medical Essays*^m: but the former course of the malady more frequently obtains, terminating at length, if it be not first cured, in a lingering manner. But the fæces of the intestines sometimes begin to appear white-grey, or clay-like, several days before the fit of the distemper; and sometimes the first attacks of the malady begin with a flux of yellow matter by stool, while at the same time there is an apparent jaundice-colour of the skin and urine.

All these symptoms plainly teach us that the cause of this malady is some obstruction that hinders the flux of the cystic bile from passing into the intestine, duodenum; from thence the quantity of bile daily augmenting, it by degrees distends the gall-bladder to a greater capacity, until by the greater bulk, or greater acrimony of the stagnant bile that is collected,

or

^m Tom. II. No. XXIX. pag. 345, &c.

or by the irritation of some impeding obstacle, driven into the narrow part of the neck of the gall-bladder, violent pains arise with convulsive motions of the parts in the abdomen, enormous vomitings, and restless tossing of the body from the anguish that is scarce tolerable. But by all these, even violent concussions of the body, and more especially by the most violent pressure of the diaphragm, and abdominal muscles conspiring together, either the impeding obstacle to the bile's course is forwarded, or removed, or else the contained bile of the gall-bladder is pressed back again into the blood; so that by these efforts the cause over-distending the gall-bladder is either removed, or at least is considerably diminished, but then a jaundice ensues; and if the impeding cause, that intercepts the bile, be not at the same time removed, the bile being afterwards by degrees accumulated, will cause a return of the whole tragedy. But when the bile has been often, or repeatedly driven back again into the blood, the bilious vessels become so dilated, as to allow a repulse of this fluid with much less force; and at length may be able to return even with ease, whence the jaundice becomes perpetual; sometimes indeed of a deep complexion, after a slight anguish, or slight vomiting have been before; but then the symptoms never return with that violence, as a slighter force suffices now to urge back the bile through the liver into the vena cava.

I have often wondered that these patients, thus labouring under a perpetual jaundice, should yet keep up so keen an appetite, digest their food tolerably well, and void their stools in like manner. Possibly the hepatic bile may at these times be supplied proportionably in a greater quantity, or with a greater degree of saponaceous acrimony, so as to answer the want of the cystic bile; or perhaps some part of the cystic bile may return back into the hepatic pores or tubes, and so increase the strength and action of the

hepatic bile; for that there are ways open from the hepatic pores to the gall-bladder appears from anatomy. But all these patients become more or less emaciated, and at length fall into a dropsy, from the too great dissolution that the bile makes in the globular and cohesive texture of the blood, from the long continuance of the disease.

It appears then from all that has been said, that any obstacle impeding or intercepting the passage of the bile from the gall-bladder, may be the cause of the present malady, which may therefore be subject to various degrees of difficulty in the cure, as those causes are more easily or difficultly removeable. Sometimes I have seen bile discharged by vomiting, as tough almost as glue, and the jaundice has no more returned after it. But numerous observations inform us, that the most frequent cause of such a periodical jaundice is some calculous concretion formed in the gall-bladder, cases of which kind are found almost in every author; for the bile confined forms stony concretions in a very short time; as I observed in a quantity of that liquid that I left to putrify in a clean glass vessel, at the bottom of which I found calculous grumes. Among many that have been under my care for this malady, I have hardly seen any cured without a discharge of gall-stones, larger or smaller, that have come away in their stools, which are therefore to be diligently inspected in these cases. I have opened a number of bodies also deceased of the present malady, and always have found gall-stones of this kind; which indeed afford a very great variety as to their figure, colour, hardness, and magnitude; but those bilious calculi that have ofteneft occurred to my observation, have been such as appeared outwardly with a colour and unctuousity, almost like that of Venice-soap; and upon breaking them, have included a yellow nucleus or kernel. I have now by me seventy of these stones differing in magnitude, and almost all of them ap-
proaching

proaching to a pyramidical figure, and discharged by stools from an old lady, who afterwards lived many years free from her malady. I took above an hundred stones of the same sort out of the gall-bladder of another old woman, who died dropfical after a long continued jaundice. And whilst I am now writing there is an illustrious old lady under my care, who being afflicted with a jaundice for two years past, now begins to discharge gall-stones in her stools almost every day, which are sometimes black and very hard, sometimes whitish and variegated with blackish specks, and sometimes, though more rarely, of a yellow colour, which are of the softest texture; at the same time there is also the appearance of a great quantity of gross sand or gravel found in her stools. She has already discharged above two hundred, of which the largest stone exceeds not the size of a pea; from whence I am induced to believe, that larger stones remain still behind, although her jaundice begins to go off. A few months past, in the body of a nobleman, who died of an hepatitis, after being several times afflicted with a periodical jaundice, I found a stone in the small intestines resembling in colour the famous stone that is called an American-porcupine, soft enough in its outer surface, but including a nucleus of a much harder consistence, and more of a dark-brown colour.

Now it is easily apparent such stones produce no jaundice, unless they block up the course of the bile from the gall-bladder; and therefore if they are very often found by anatomists in bodies that have been never known to be afflicted with a jaundice; there is no reason thence to conclude, that therefore these stony concretions are unable to be the productive cause of a jaundice. From hence also one may understand why upon removing of the seat of these stones a free passage may be opened for the bile into the intestines, so that sometimes, even in the midst of this jaundice, we have yellow stools; namely,

when a quantity of bile is by the strainings in vomiting urged into the duodenum, while the stones indeed impede its course, but not so far block it up as to prevent some bile flowing out when urged by a more violent pressure. Indeed we observe all the same appearances when a stone of the urinary bladder hinders the free exit of its contained fluid. 'Tis thus apparent, therefore, that *Helmont*ⁿ has no reason to reprehend physicians for placing the cause of a jaundice in an obstruction of the cystic duct; and that merely to establish the idle notion of his excrementitious ferment, of which so many have dreamed after him throughout Germany.

Sometimes it will also happen, although rarely, that the discharge of the cystic bile shall be impeded, and the stools shall appear white, when yet there is no jaundice-colour to be observed in the skin; but in such a case the bile, although retained in the gall-bladder, is yet so viscid or glutinous, that it cannot flow back again into the vessels of the liver, but by gradually increasing in quantity, it insensibly overstrains the gall-bladder to an immense bulk; of which a case wonderful enough is given us^o in a lad twelve years old, who by a fall from a high place had a violent contusion in his right hypochondrium, and thence after suffering various complaints, died dropfical. In this body the gall-bladder was found of a prodigious bulk, including eight pounds of a thicker sort of bile, of which there were formed a number of concentric strata, or baggs, of a firmer consistence, as they approached nearer to the sides of the gall-bladder; while those seated towards the middle of the cyst or bladder, were more tender, and less opaque; the common biliary duct was here much enlarged, and full of many small spongy stones of a yellowish colour, that swimm'd in the water in which

ⁿ In tractatu, cui titulus, *Scholarum humoristarum passiva deceptio atque ignorantia*. Cap. iv. pag. 820, &c. ^o Medical Essays Tom. II. No. XXX. pag. 352, &c.

which they were put : but in the mean time it is observable, that in this lad there were no other remarkable symptoms of a jaundice more than a white colour of the fæces from the intestines.

Therefore when such a periodical kind of the jaundice has offered itself to my practice, agreeable to the admonitions first given me by the worthy preceptor of these aphorisms, and confirmed by reading numerous observations, I have always thought of stones lodged in the gall-bladder, and have accordingly, even to this day, directed the whole scope of my curative intentions to that cause, and with the most desirable success.

'Tis self-evident there are here only two ways of relieving the patient, either by dissolving the concreted gall-stones, or by expediting their passage into the duodenum ; by which last we may reasonably hope for their evacuation, among the other intestinal contents, by the stools.

I have by many tryals endeavoured to find a menstruum able to dissolve these calculous concretions, and of a kind that might reach to their seat with unchanged virtues, but have not yet been happy enough to discover such. 'Tis true that a copious, and long continued use of the juice of grass, dandelion, succory, fumitory, and the like plants, has in the course of my practice been generally followed with plentiful discharges of stony fragments of this kind, expelled amongst the intestinal fæces ; and sometimes even those fæces themselves have appeared hard, and rough set with such fragments, so as even to excoriate the anus or end of the rectum in their exclusion ; but I am not, therefore, certain they were fragments of stones thus broken within the body by such a menstruum ; because we often find such small rough calculi, fragments, and even sand, within the gall-bladder, hepatic ducts, and even sometimes in the substance of the liver itself. A very remarkable case of this kind we have related, from under the obser-

vation of *Vesalius* ^p, in the body of *Prosper Martelli*, of the city of Florence, who for many years was afflicted with the jaundice, and at last died suddenly. *Invenit enim bilis vesiculum duorum pugnorum magnitudinem facile adaequantem, & exiguis lapillis quodammodo plenam, qui invicem connexis granis seminibusve milii, aut potius asperae superficiei vulgaris officinarum tutiae, erant simillimi.* “ For he found the gall-bladder twice as large as one’s fist, filled with a sort of small stones, that seemed made up of smaller conjoined particles like the seeds of millet, or rather very much like the rough surface of the common tutty of the shops.” It seems therefore, that the retained bile may sometimes concrete into small calculous grumes, without running together by length of time into larger calculi; from whence one might be mistakenly induced to believe, that such a discharge of them in the stools, followed from a comminution of them into lesser parts, by the use of appropriated medicines.

The chief hopes therefore of a cure, will consist in procuring a gradual dilatation of the passages thro’ which these calculi must pass, in their way by the narrow neck of the gall-bladder, through the cystic and common duct into the duodenum. We are indeed taught by anatomy, that these ways are very narrow; but then numerous and faithful observations inform us, that they will admit of being wonderfully dilated, so as to yield a passage even to stones of a very considerable magnitude. Even the same thing we observe to succeed in the ureters, which are often wonderfully dilated in those that have been long subject to fits of the gravel, by the discharge of renal calculi: and I have myself seen them thus so much enlarged in a calculous patient, that I could easily insert my fore-finger. But we even see there is a kind of peristaltic or automatic motion in these maladies, by which nature endeavours

^p In Epistola de radice Chinae Tom. II. pag. 647.

vours the expulsion of the offending calculus : for we also see that these bilious or icterical colics, are usually joined with enormous vomitings, that by the violent concussions of the abdomen, the stone may be forwarded in its exclusion. And the like vomiting is also, with the like usefulness, excited when a stone is driven through the ureter from the kidney to the bladder, as all physicians well know. But when once these passages have been enough dilated to transmit a calculus of some bulk, they will afterwards transmit more of the same sort with much less difficulty, as sufficiently appears from the foregoing observations. Many practical observations persuade us that the exclusion even of very large stones, by these ways, is not to be dispaired of. I have observed, in the mother of my own wife, that after several fits of such a periodical jaundice, a very severe pain would suddenly arise (in that part of the abdomen that is the seat of the duodenum, as she pointed out by her finger) so as to a fainting almost in a swoon ; but in a quarter of an hour after, this pain has ceased, and by diligent search into the stools, a stone, which I have now by me, was found two days after the fit, appearing as large as the first joint of one's thumb, outwardly whitish and hard, but of a greasy or soapy texture, and including internally a softer yellow kernel. But from observing two hollows impressed in the sides of the same stone, I suspected it lay with others of the like kind, as was afterwards found true by the exclusion of two others, not much less in bulk than the former. After these she continued in tolerable good health, free from her jaundice. I have seen more cases of the like kind in my own practice, and medical histories supply us with a greater number of examples in which stones have been voided by the anus, where all circumstances have concurred to shew that they were neither first bred in the intestines, nor afterwards increased there in their bulk by long staying, but being expelled from
from

from the gall-bladder, have, in a few days time, gained a passage thence through the intestines; and the manifest removing of the pain, conformable to the course of the fæces through the intestine, has shewn the same, when the stone has been so large or so rough as to pass with some difficulty forwards. But I believe it will be needless for us to dwell longer in repetitions of the like cases, since those already given are sufficient to shew the good grounds one may have to suspect stones of the gall-bladder in every periodical jaundice; and that then we may not despair of obtaining a discharge of them from the gall-bladder into the duodenum, however considerable they may be in bulk, since the said passages, naturally but of very scanty dimensions, are yet capable of so considerable an enlargement, as plainly appears both from the patients that have been cured of such a stubborn jaundice by an exclusion of the calculi, and from the anatomical observations that have been made in opened bodies. The celebrated Dr *Laurence Heister*^a found in the gall-bladder of a woman that was publicly dissected a stone as large as a wall-nut, of a deep yellow colour, but very friable. But here the opening of the common duct of the bile into the duodenum, which should not naturally much exceed the dimensions of a small straw; was so large as to give an easy admittance to the little finger; being doubtless so much dilated by the like large stones that had before gained a passage from the gall-bladder.

But the curative treatment of these patients is either such as is suited to the time of their paroxysm, or fit of great anguish pain and vomiting; or to the productive cause of the distemper itself, when those symptoms have ceased, and a consequent jaundice appears. In the former, during the urgency of those troublesome symptoms, nothing can be given better than a decoction of barley with honey, whereby the

stomach

^a Acta Physico-Medica Natur. Curios. Vol. I. pag. 404.

stomach being moderately filled, the vomiting will be facilitated; and, besides this, the vomitings may be longer sustained, by the repeated draughts of such a liquor, taken upon the nauseating stomach after every fit of vomiting. For these salutary efforts of nature greatly conduce to move forward the stone, and press out the accumulated bile, if the passages are not intirely blocked up; or at worst it may be thus repelled into the blood, with a relief to all the pressing symptoms. That liquor will be also serviceable injected in the form of clysters, to wash out the gross fæces that encumber the colon, where, by their weight and pressure, they may impede the exclusion of the bile, as we before intimated. But where the intolerable anguish and excessive vomiting prove over-violent for the patient's strength, or the severity of the pains too urgent, opiates may be given to good advantage for quieting the disturbances. Nor will an opiate here retard the expulsion of the stone, but rather conformable to observations it will facilitate the passage; for the most uneasiness is commonly perceived while the stone lies in the narrow duct of the gall bladder, or sticks at the narrow opening of the common duct betwixt the coats of the intestine, called duodenum; for the irritation given to these parts by a rough or a large stone, often occasions such a convulsive constriction in them, that the stone is for some time arrested by it. But a relief to the pain by an opiate, as all physicians well know, will by relaxing the cramped parts, procure a more easy exclusion to the calculus; and for the same reasons we so often successfully administer opiates for stone or gravel of the kidneys, arrested in the narrower parts of the ureters, in the way to the bladder, observing at the same time to lubricate and relax the passages, with emollient decoctions, plenty of oil of almonds, warm bathing, &c. But where the signs denote an inflammation is to be feared, or that too great a fullness of blood will endanger a rupture of some

some vessels by the strainings to vomit, blood-letting will then be of service; which otherwise, will conduce nothing to the cure of the complaint, as every one may easily perceive.

After those urgent symptoms have been quieted, these patients will in a few days often think themselves perfectly cured, so as to refuse any further attendance. Yet they are to be diligently admonished, that the root of their distemper is still lurking in the body, from whence the same symptoms will soon sprout up again, unless they will submit to a proper course for its extirpation. Here then our indications are to resolve and expel the stony concretions; which will be the more easily obtained, as the malady is more early discovered, and treated by a proper method of cure. For in the beginning, these stones are both softer and less in bulk; and may therefore be either dissolved, or at least more easily excluded. For the observations of *Glisson* seem to shew us, (as we before observed at §. 916.) that the stony incrustations of the hepatic vessels in stall-fed oxen, in the winter, again dissolve by feeding on the green pasturage, during the spring season. Some years past, I had the care of a poor man, who was obliged to maintain himself and a family by his day-labour, and therefore unable to support the expences of a course of medicines; but having good spirits and a great desire to be relieved of his malady, by promising him a cure I easily persuaded him to live altogether upon grass. He boiled a large quantity of grass in pure water, and after sweetening the decoction with honey, made use of it for his common drink: and the tenderest grass sprouting in the spring season, or rising up again after the first mowing, he boiled in flesh broths, and made it intirely his food. He confessed indeed, that for some time in the beginning of this course, his diet did but little please him, but growing accustomed to it by degrees, he could afterwards eat it without any kind of disgust, and therefore

therefore used it for two whole years except for some parts of the months in the winter-time. He assured me he could easily distinguish the best pasturages by the flavour of the grass, and that he was obliged secretly to cut out his diet from the meadows; since the farmers finding him to have so large an appetite, often gave him forcible repulses. By this course only he was perfectly cured of a most obstinate jaundice, in which even his saliva began to taste bitter; and I saw him some years afterwards in a good state of health. It will be highly serviceable in these cases to let the patient drink daily six or eight pints of fresh made whey, every day for the space of some months: for this is a liquor that contains the intire virtues of the grass, without being clogged with the butter and curdy parts of the milk; however, it is not every stomach that can dispense with so great a quantity, for their daily drink. And therefore I have ordered the strongest decoctions of grass, dandelion, succory, fumitory, and the like grassy herbs to be made by boiling in the whey of milk, dissolving half an ounce of the polychrest salt in each pint of the decoction; to be then sweetened with two or three ounces of the syrup of the five opening roots, or of fumitory, &c. A third part of this apözem is taken an hour before breakfast, dinner, and supper every day, for three months; and then in the summer months I have directed a course of the Spaw waters, and, finally prescribed a large quantity of Venice-soap with honey to be given in the autumn and winter months, drinking after it a decoction prepared from the five opening roots. Thus by a constant perseverance in the use of such medicines, I have known these periodical kinds of the jaundice to be cured; and have always then found stones in the stools, or at least stony grumes in great plenty. In such cases likewise I have admonished the patient to strike often with his hand upon the right side, on that part of the hypochondrium, where the bottom of the gall-bladder projects beyond

beyond the margin of the liver ; and also to use horseriding, or that of a coach, on a rough way, walking, and exercises of the body, by the reciprocal shocks or motions from which the stones may be broken, or at least ground together and diminished, or hindered from increasing, and disposed more easily for exclusion.

But when the stones lodged in the gall-bladder are of an extraordinary magnitude, or when the passages through which they must pass are very narrow, and not sufficiently dilatable, there is then but little hopes ; since hitherto we know not any medicine that can dissolve infallibly these gall-stones within the body. But observations have taught us, that sometimes the gall-bladder distended with bile has grown to the peritonæum, where, by a consequent inflammation, and suppuration, a fistulous ulcer has been formed, by which being dilated, very large stones have been extracted from the gall-bladder, through the opening that has been made in its bottom by the suppuration. The celebrated *M. Petit.*^r has here therefore not without reason proposed the operation of cutting for stones of the gall-bladder, as both practicable and useful ; namely, whenever it appears that the bottom of the gall-bladder coheres with the peritonæum. But the signs by which one may know there is such a cohesion of the gall-bladder are there enumerated, and joined with a number of observations that illustrate this subject ; namely, under a case wherein the enlarged tumour, or distention of the gall-bladder, was mistakenly opened for an abscess. But it is to be observed, those perish by an effusion of the bile into the capacity of the abdomen, who have the gall-bladder opened without any such cohesion of it to the peritonæum ; and therefore it is with good reason inculcated to be necessary to enquire diligently into, and be well satisfied of

^r Memoires de l'Academ. Royale de Chirurgie Tom. I. pag. 155—188.

of that truth. It may at first view indeed seem bold and severe in a surgeon that attempts this operation; but it is certainly less audacious than the first attempts to take the stone by cutting from the urinary bladder.

Why in acute or febrile distempers a jaundice is so calamitous before the seventh day? It was before declared at (§. 564.) that acute maladies are properly called, simply so, when they run swiftly, and with danger through their course; and yet that they sometimes extend themselves to fourteen, or even twenty days. But that such diseases as terminated the most swiftly, within seven days, and with great danger, were called peracute: but from what has been said at §. 587, and §. 741, concerning a crisis and critical days, it appears that a concoction of the matter of the distemper, and a change of it into a better condition, are not to be expected in the increase or advance of the disease, but only when it has arrived to the height, or has begun to diminish. When therefore in acute diseases a jaundice appears before the seventh day, it is always to be suspected, because it rather denotes an increase of the malady, and that the vessels of the liver which have hitherto remained pervious, are now beginning to be stuffed with the yet unconcocted matter: for even the fat of the omentum dissolved by an acute fever, and an atrabiliary matter fused by the same cause, may produce an hepatitis of the worst kind, as may be seen at §. 916. For which reason *Hippocrates* has pronounced, “that a jaundice arising before the seventh day in fevers is a bad or mischievous sign.” *Quibus in febris ieteri oriuntur ante septimum diem, malum*: but then he afterwards very prudently subjoins, *nisi humores per alvum cedant*: “unless the morbid humours go off by stools.” For if the atrabiliary or other matter driven into the liver there meets a difficult passage, and forms an obstruction of the vessels;

* Aphor. 62. Sect. IV. Charter. Tom. IX. pag. 174.

vessels; yet by a dilatation of the biliary tubes it may soon pass thence through the hepatic pores, or ducts, into the intestines, and be evacuated in stools, so as to disencumber the liver; and in that case there is a kind of translation of the morbid or hesitating matter, moved by the violence of the fever, into the portal vessels of the liver, but making there only a short stay, it is without further damage to the liver expelled thence through the hepatic duct, into the intestine duodenum. Many cases of this kind have come under my care, and among them one, of a man, who in the middle of the night fell into water that much affrighted him, whence the next day he was taken ill, with a very sharp pleurisy in his left side; on the fourth day of the malady a jaundice-colour appeared in his eyes, with a considerable swelling in his hypochondria; but then on the same day he had five stools in the evening, which brought relief, and the flux from the bowels continued until the end of the ninth day. The matter discharged by this flux was first yellow, and very foetid, afterwards brown, and lastly grey or ash-coloured, and more ill smelling; but on the fourteenth day a critical sweat put an end to the distemper. Perhaps this may lead to the understanding of another passage in *Hippocrates*^t where we read, *in biliosa febre ante septimum diem icterus cum rigore superveniens febrim solvit: sine rigore vero si fiat intempestivè, lethale.* “ In
 “ a bilious fever, a jaundice supervening with a
 “ shivering before the seventh day, terminates the
 “ fever; but if it unseasonably happens without the
 “ shivering, ’tis fatal.” For the first jaundice in this case indeed obstructs the liver, but then the shivering which attends, shews that the obstructing matter is not to stay long in the streights of the *venæ portarum* in the liver, but already begins to relent and fluctuate, as was proved more at large in the commentaries

^t De acut. morbor. viét. Charter. Tom. XI. pag. 163.

mentaries to §. 741, where we treated upon a critical shivering that terminates an ardent fever.

But a jaundice has been mischievous in acute diseases before the seventh day, when not attended by any flux to discharge the offending matter that oppressed the liver, as appears from a number of observations made by *Hippocrates*, which were mentioned before at §. 923, No. 4. And in the place there quoted, it is observed^u, that a copious evacuation by urine, stools, or an hæmorrhage from the nose, or by all together, has been of great service; but in another patient, who had a jaundice invaded on the sixth day of the malady, without any of those evacuations, the distemper was fatal. But also in another place we read of *Hermocrates*^w, who was seized with a jaundice on the sixth day of his malady; but his urines were crude or thin, and he became delirious; and although his distemper lingered beyond the time of those that are acute, yet he expired on the twenty-seventh day. There was indeed a copious, and thin, or liquid flux, from the bowels, came upon the twenty-fourth day of the distemper; but coming too late, it gave no relief: for the foundation of all success, in these cases, depends upon a speedy discharge of the offending matter, forced upon the liver by the violence of the distemper.

Why a jaundice is so stubborn in these after the seventh day? That the matter of the distemper being concocted, and rendered fluxile in acute inflammatory diseases, may by a metastasis leave the first seat, and remove to occupy other parts, so as to excite new maladies, was before declared at §. 593. And at §. 839, and 841, it appeared, that such a matter might likewise go on to be deposited in the liver; through which it is often unable to make its passage, without the greatest difficulty; but some-

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times

^u Epidem. I. textu. 65. Charter. Tom. IX. pag. 66. ^w Epidem. III. aegrot. 2. ibid. pag. 210.

times arresting in the liver it there causes a dangerous abscess, extremely difficult to cure, as we shewed more at large under §. 936. Therefore, although after the seventh day one might hope there could be no crude matter deposited upon or driven into the liver, but what must by that time be somewhat concocted or subdued, so as to be much less mischievous; yet much damage is to be feared thence, unless it again speedily shifts its place of residence, or is some way discharged: therefore *Hippocrates** has prudently made this distinction, when he says, *quibus in febris die septimo, aut nono, aut decimo-quarto icterus obortus fuit, bonum: nisi dextrum hypochondrium durum fiat, alioquin non bonum.* “ In “ those fevers where a jaundice arises on the seventh, “ ninth, or fourteenth day, it makes a good or critical “ sign, unless it occasions a swelling of the right hy- “ pochondrium; but at other times ’tis a bad sign.” Yet in his coan presages he calls it *critical*, and even applauds it when appearing upon the eleventh day: for if the hypochondrium grows hard ’tis a sign the matter transferred is retained, and will in time either cause an abscess, or a schirrhus, if its more fluid parts are dissipated; for which reason in another place† he lays down this general practical axiom; *ictericis jecur durum fieri malum*; “ tis a bad sign for the li- “ ver to become hard in those who have a jaun- “ dice.”

But since there are frequently critical disturbances, attended with anxieties, when there are any infarctions of the lungs; therefore, these translations of the morbid matter, concocted and fused, upon the liver, seem oftener to happen than is commonly believed; yet so that it stays not long in the liver, nor does it often so far impede the passage of the blood through the

* Aphor. 64. Sect. IV. Charter. Tom. IX. pag. 175. Et Coacar. praenot. No. 122. Charter. Tom. VIII. pag. 858. † Aphor. 42. Sect. VI. Charter. Tom. IX. pag. 275.

the venæ portarum in that viscus, as to occasion a jaundice thereby; upon which article you may consult what was said in the commentaries to §. 633.

Why a copious dysentery, &c.] Because in that case the matter oppressing the liver is discharged through the intestines; but since, as in the beginning of this aphorism was declared, the contained humours of the liver very easily putrify; therefore, thus the matter being rendered more acrid, may prove the cause of griping pains in its passage through the intestines. But this dysentery must soon terminate, if it be salutary; namely, when the matter of the distemper is run off, and the integrity of the liver not injured: for if the liver be once corrupted, a lingering and incurable dysentery follows. In the epidemical fevers that are described by *Hippocrates*², in some of those patients who had a jaundice upon the sixth day, he observes, that the distemper commonly ended in a dysentery, by which many safely recovered. He likewise applauds a dysentery that is not lingering for the relief or cure of splenitic disorders³. But we know all the humours of the spleen are derived from it into the venæ portarum, which may convey it through the liver, and thence it may go into the intestines. Therefore, it is hence again apparent, that nature often makes it her common road to remove the matter of a distemper, from some other parts of the body into the liver, and from the liver to exterminate it quite out of the habit by a dysenterical flux.

Why blood-letting is so ineffectual, &c.] Blood-letting is for three reasons commonly used to the cure of an inflammation; namely, to prevent any further injury or distress in the vessels that are inflamed, to lessen the quantity and impetus of the

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blood

² Epidem. I. textu. 45. &c. Charter. Tom. IX. pag. 66.

³ Coac. Praenot. No. 466. Charter. Tom. VIII. pag. 879, & Aphor. 48. Sect. VI. Charter. Tom. IX. pag. 281.

blood into the obstructed vessels (§. 396.), and that the vessels distended with impervious matter may be restored to their proper vibrations, by lessening the fluid that oppresses their muscular and elastic force (§. 398.); or lastly, that the obstructing matters having a less impulse of the fluids urging behind, may be repelled back into a larger part of the vessel, and thereby remove the obstruction (§. 400.). Now it readily appears, that all these effects of blood-letting will be much less in their efficacy towards curing an inflammation of the liver, since the blood of the portal system is already venal, before it be driven into the converging branches of that vessel in the liver; whence it follows that the impressed force of the heart and arteries in this blood must be extremely weak; but when an inflammation is seated in the final extremities of the hepatic artery bleeding will then have a more considerable effect, no less here than in other parts of the body. But although in the former hepatitis less efficacy may be expected from the lancet, yet the opening of a vein is not always to be condemned as useless in the malady; for it may reduce the too great violence of the fever (§. 610.), diminish the heat, relax or empty the vessels, and allow a more easy entrance, or admission of diluents and attenuants, to be thus more intimately mixed with the humours.

Why in every acute distemper it is so necessary to enquire into the state of the hypochondria, &c. We see throughout the works of *Hippocrates*, that he gave a strict attendance to the various conditions of the hypochondria in most diseases, and even oftener mentions the hypochondria than any thing that regards the pulse. Consult here, therefore, what was proposed concerning the conditions of the hypochondria, as a sign in diseases, under §. 701, and 735, where we gave many particulars relative to this subject. And concerning a rising outward of the
hypochon

hypochondria, as a sign in a paraphrenitis, we likewise treated at §. 909.

Why the colour of the eyes, and urines, are such an immediate index, &c.] 'Tis a constant observation, that the colour of the eyes and urine always afford the earliest signs of a jaundice: for the bile being a saponaceous fluid easily dissolves in the aqueous parts of the blood, and together with them passes into such small pellucid vessels as will not naturally give admittance to the red blood, or its yellow serum; but the white tunica adnata of the eye being composed almost entirely of those smaller vessels, which appear almost naked, or only covered with a most thin pellicle; therefore, the yellow colour arising from a commixture of the bile with the blood, is here more immediately, and plainly perceived, than in any other parts of the body: but the renal tubes which secrete the urine do likewise deny admittance to the red blood, or its serum, and permit only the intermixed watery saline, oily and vitiated parts of those fluids to distil through them; and therefore, for the former reasons the bile will likewise first shew itself in the urine by tinging it immediately with its own colour: but in other parts of the body the thickness of the skin hinders so early an appearance of the yellowness, or at least the numerous red blood-vessels in them, turgid with that purple fluid, greatly obscures the yellow colour of the smaller pellucid vessels; as we see, for example, in the lips, where even the skin is very thin. But in a long continued jaundice the red texture of the blood is gradually dissolved by the intermixed bile, and bears daily a less proportion, while the quantity of the bile repelled into the blood, is every day augmented, whence at length the whole body appears of an intense yellow, while the intestinal fæces being no longer watered not tinged by the bile, appear of a whitish, or of a greyish colour; and so soon

as these last regain their yellow colour in the intestines, the yellowness of the skin and urine goes off. But in the mean time it seems, that the bile has no easy admittance through those vessels that convey the chyle, nor those which separate the milk from the blood; for the chyle in the lacteals, in the lumbal cysterne, or receptacle, and in the thoracic duct is always found white, and sweet of taste, although naturally there be so large a proportion of the yellow and bitter bile poured into the intestines. I saw a woman who had a yellow-jaundice in her face, with an intense yellow-colour spread over her breast, while the rest of her body kept its natural colour; and the infant which she suckled had no disgust to her milk, nor was it affected with any yellowness or bitterness. It is also with great difficulty that the bile can gain any passage through the salival glands; for in an incipient jaundice I never knew the patient complain of a bitter taste in the mouth; but in an inveterate jaundice, I have sometimes, although not always, remarked such a complaint. Lastly, in the more stubborn kinds of the jaundice the blood is sometimes so melted and corrupted by the bilious cacochymia, that hardly any of its more permanent red parts are left, but the whole habit throughout appears universally of a yellow-colour, both within and without the body, in so much, that even the bones and cartilages are not exempted from the tincture of the bile; and even more, those very thin humours that are percolated through the most subtle vessels of the eyes, are so much tintured as to occasion the images of all objects, transmitted through them, to appear of a yellow-colour, as the late celebrated *Hoffman*^b assures us he twice observed.

Why,

^b Frid. Hofm. medic. ration. systemat. Tom. IV. part. IV, pag. 353.

Why disorders of the other viscera so much affect the liver, &c.] First, because the liver lies with its concavity incumbent upon most of the viscera here mentioned, whereby disorders in those organs may injure the liver, even by mere contiguity. Secondly, because the venal blood returning from those viscera of the abdomen flows altogether into the trunk of the portal vein, by which it is afterwards distributed throughout the whole liver; and therefore by this communication of their blood, disorders in those parts may be also easily imparted, or at least the secretion of the bile may be greatly disturbed in the liver, to which secretion the venal blood of all those parts is required, as is shewn in our physiology^c.

And why, on the reverse, the liver so much affects them, &c.] For the reason last given: for the liver being obstructed, there is a stop to the free course of the blood thro' the smaller branches of the venæ portarum, when the veins of the viscera that are subservient to chylication cannot evacuate the blood they contain, altho' more of that red fluid continues to be impelled into them by the arteries; whence all those parts become over filled and strained. This lets us into a knowledge of the reason of that anguish or anxiety, which is felt thro' or about the præcordia, when the liver is distempered; and also, why violent pains of very different kinds often occupy divers parts of the abdomen, and of the loins to which the mesentery is affixed, while the cause of the complaint lies at the same time within the liver. From hence it is, that those pains are so often mistakenly ascribed to a disorder of the kidneys, or to convulsive constrictions, when yet a consequent jaundice often shews the true cause in a very short time; into which mistake the judicious Dr *Morton* has candidly confessed himself to have been led^d.

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Why

^c H. Boerhaave Institut. Medic. §. 350. 4.
Lib. III. Cap. XIII. pag. 138.

^d Oper. Medic.

Why the liver may increase to such an immense bulk, &c.] How great a bulk the liver may acquire when a large abscess being formed by a suppuration, makes a daily collection of matter, was before shewn under §. 936. And even an obstruction formed in this organ, (as the hepatic vessels are like a pulp so easily dilatable, by the humours that continue to be urged into them) may increase the dimensions of this viscus to a monstrous size; like the case of a schirrhous liver which we related under §. 946. But such a dilatation of the vessels which compose the substance of the liver, must be the consequence, when the juices driven into its fabric can gain no passage through; altho' sometimes the bilious tubes in the obstructed liver may be dilated, and so may the final extremities of the *venæ portarum*, which anastomose or communicate with the corresponding branches of the *cava*, dispersed thro' the liver, so as to allow the arrested blood an easy way to pass on from the *porta* to the *cava*; in which case the obstructed vessels being less urged, will suffer a less dilatation; or may even at length collapse and concrete with their contained fluid into dense substance, so as to give the liver a dry or juiceless appearance, and diminish its bulk. Moreover there have been some veins found in the *mesentery*^e which open not into the large mesenterical vein, but send their blood into the *cava* itself; whence it seems not improbable, that an obstruction being formed about the ends of the portal veins in the liver, the blood brought by the two mesenterical arteries, may then gain a passage thro' those by-veins, directly to the heart, without ever passing to the liver. Perhaps also the blood by a retrograde motion may, in such cases, return back thro' the arteries themselves from the veins, since these last have no valves in these parts, as we observed before upon another occasion at § 918. Under such circumstances, all the

^e H. Boerhaave Institut. Medic. §. 336.

the functions of the liver are disturbed or abolished, and the patient holds up a great while under his languishing malady, while the liver itself may shrink up to a bulk incredibly small.

The celebrated *Tulpius*^f found the spleen very much enlarged in the body of a man who died of a dropfy, with a copious evacuation of blood upward and downward; but the liver appeared dry, and burnt up. He also found, in the body of a woman deceased of a jaundice, with a dropfy, *§ jecur aridum, atrum, exsuccum, & instar corrugati corii ita in se contractum, ut vix aequaret geminum pugnum*, “ that the liver was become so dry, black, and juiceless, “ that it appeared contracted into itself, like leather “ that is shrivelled by heat, and was scarce equal in “ bulk to two fists.” Livers that have put on such a dry and juiceless condition, have been likewise observed several times by myself in the opening of bodies deceased of a jaundice.

Why an ascites, or a tympany more cruel than that, may spring from a disease of the liver.] It will hereafter be made to appear, when we treat upon a dropfy, that a want of the larger red parts in the blood disposes the body to that distemper: but in an obstinate jaundice, the bile continually repelled into the blood so dissolves the red cruor, that at length hardly any of that colour remains. And again in our physiology it is shewn^h, that among other uses ascribed to the omentum, one is to absorb the moist vapours that are continually poured into the abdomen of an healthy animal: but as all the venal blood of the omentum goes to the liver, if there be an obstruction in that organ, the veins of the omentum cannot evacuate themselves, when the absorption by veins of this part will of course be impeded by their over-distention, from whence the roscid vapours will be

^f Observ. Medic. Lib. II. Cap. xxxv. pag. 153. ^g Ibid. Cap. xxxvi. pag. 154. ^h H. Boer. Instit. Medic. § 331.

be collected in the capacity of the abdomen, and may there by degrees form an ascites. But all practical physicians well know how rare it is to make a cure of a dropfy, whose cause is a disorder of the abdominal viscera, more especially of the liver. For altho' by tapping, or any other evacuation, the waters may be discharged from the abdomen; yet the productive cause still remaining, often inflexible to all remedies, will procure a return of the dropfy, and that frequently in a very little time.

But that a putrefaction is much to be dreaded in distempers of the liver, may appear from what we proposed at §. 918, and §. 933; and likewise before at §. 647, it appeared, in treating upon the material cause of flatus and belchings, that the permanent air lodged in our animal solids and fluids, is by a putrefaction of them extricated, and collected in an elastic state; and therefore the reason is thence apparent, why a tympany following a putrefaction in the liver is a distemper so much more cruel than an ascites, as we lately observed at §. 939, and as we shall more plainly make to appear hereafter, in our chapter upon a dropfy.

Why the liver is extenuated or wasted by a dropfy, &c.] Of this we lately treated, when we mentioned the causes by which the liver might become so much dried up; in the third paragraph from hence backward.

Which dysenteries are hepatic?] If the collected matter in the liver makes its way thro' the hepatic pores, it may then find a way into the intestines, which are then often irritated by its acrimony into very severe gripes or pains, with a perpetual tenesmus or inclination to the stool. While in this manner the matter of the disease may be carried off by the dysentery, without injuring the sound state of the liver, such a dysentery will be salutary; as we a little before shewed with confirmations from *Hippocrates*.

But

But where a corrupt pus or matter, rendered acrimonious by standing, drains into the intestines from an abscess in the liver, it makes a dysentery of a much worse kind. Or if, again, a most putrid or cadaverous liquid drains from the corrupted liver, or if a corroding ichor shall distil into the intestines from a schirrhous of the liver, degenerating into a cancer, a fatal dysentery then ensues, that is curable by no art. Therefore *Hippocrates*ⁱ, with good reason has pronounced those to be bad dysenteries which invade with an inflammation upon the liver. But that those were salutary dysenteries which he has observed in his epidemics, in patients who had a jaundice upon the sixth day of the malady, towards the close of their distemper; which shews the great difference in these discharges.

ⁱ Praediction, Lib. II. Cap. XIII. Charter. Tom. VIII. pag. 321.

Of an INFLAMMATION of the
STOMACH.

S E C T. DCCCCLI.

THE stomach, like other parts of the body, is liable to be invaded by a true phlegmon or inflammation; of which the following may be commonly taken for the demonstrative signs, and effects or symptoms: namely, a burning and fixed pain, that urges in a point where the stomach is seated; and which becomes more excruciating in that point or small space, whenever any thing is taken into the stomach; and to this joins a most painful rejection or vomiting, immediately after every thing that is swallowed, and a painful hic-coughing; lastly, extreme and perpetual anguish is felt about the præcordia, with an acute continual fever. The causes are here such as belong in general to inflammations; or it may spring from things acrid taken into the stomach; or from a phlegmon seated in some of the neighbouring parts.

Since it was before demonstrated (§. 373.) that all parts of the body, which have any reticular distributions of blood-vessels or arteries, and which give rise to lymphatic arteries, may become the seat of inflammation; it will appear plainly enough, that the stomach is to be reckoned very liable to the like malady: since the *Ruyschian* art of injections has demonstrated such numberless arteries distributed throughout the substance of the stomach, and mutually communicating

municating one with another by numerous inosculation, to the end that any ill effects from obstruction or pressure in one part, might be avoided by the open passage that is afforded in another; and from the same reasons, the stomach is furnished from four several arterial trunks, in distinct quarters^k. We do not therefore find an inflammation of the stomach so often mentioned by physicians; and even in *Hippocrates* it is only set out under the general denomination of a phlegmon of the præcordia.

If now you make a particular application, of what was said upon the signs of inflammations (at §. 382.) to the stomach itself, the diagnosis of the present malady may easily and fully be thence derived: but the principal of those diagnostic signs will be found the following.

A burning and fixed pain, &c.] 'Tis well known from anatomy, that the stomach occupies the upper and anterior part of the abdomen, is in part covered by the liver to the right, and has the spleen adjacent to it on the left, with the pancreas extended beneath it, and the diaphragm contiguous above, through which last its upper orifice has a passage: and therefore an inflammation formed in these adjacent parts, may render the diagnosis of a phlegmon in the stomach somewhat doubtful. To which add the change of place, which the stomach undergoes in the same person at different times, according as it is either full or empty, or distended by flatus, aliments, &c. Moreover there are sometimes wonderful dislocations and varieties observed in the abdominal viscera, and particularly in the stomach, as we remarked before at §. 169, in treating upon the prognosis of wounds.

More excruciating when any thing is taken into the stomach, &c.] This is almost a pathognomic or essential sign of a cardiac phlegmon, when the pain is so exasperated by any thing taken into the stomach, even in small quantities, and of a sort that at other times

^k H. Boerhaave Instit. Medic. §. 77.

times fits easy enough upon this receptacle. Indeed if the inflammation be seated in the parts surrounding the stomach it will be irritated by the distention of this organ; but then a sudden exasperation of the pain will not be immediately perceived by small quantities swallowed into the stomach. Therefore a vomiting here usually follows, almost instantaneously after such swallowings, with a most severe pain, during the time that the inflamed part is convulsed, and violently compressed by the action of the diaphragm, and abdominal muscles. But why a singultus or hic-coughing follows a phlegmon in the stomach, is apparent from what we proposed before upon the same article, in the comment to §. 659.

Extreme and perpetual anguish, &c.] Anatomy informs us how extremely numerous the nerves are, which spread thro' the stomach; and demonstrate to the observation of every one, that also the eighth or wandering pair of nerves, dispersing itself thro' all the abdominal viscera, runs not only near, but even contiguous with the upper orifice of the stomach. Therefore when the painful and distended parts of the stomach compress, irritate or strain the adjacent nerves, the most troublesome cramps or convulsive motions and constrictions are excited thro' all the abdominal viscera, from whence anguish is produced, in the manner we before explained it at §. 633. Hence it is, that such extremities of anguish are perceived so long as poisons are lodged within the stomach; or even when that organ is irritated by corrupt bile, or by the eating much livers of fish (extremely apt to putrify upon the stomach) an intolerable anguish ensues and continues until the stomach has thrown up its contents.

An acute continual fever,] which usually accompanies every considerable inflammation, but more especially those of the viscera. But the reason of this we gave in our history of inflammation, at §. 382, No. 8.

As for the causes that are in general productive of inflammation, we have already often mentioned them, and what we have said of them may be well applied to the present organ. But perhaps the most frequent among them all is the drinking of very cold liquors after the body has been first excessively heated by exercises; concerning the mischievous effects of which ill conduct we have often treated already under the inflammatory diseases foregoing (see §. 881.) For as drinks pass directly into the stomach, they will of course operate more powerfully, and with worse effects upon that; insomuch, that sometimes both orifices of the stomach are thereby suddenly contracted with such a convulsive force, as to be perfectly unable to dismiss one drop of its contents, either upwards or downwards; more especially, when one who is thirsty and hot with laborious exercise, drinks altogether at one and the same time, a very large quantity of the coldest drink; from which cause I have myself been a witness to the most intolerable anguish, and speedy death, within a few hours. The late celebrated Dr *Frederic Hoffman*¹ relates several cases of this kind, in which an inflammation of the stomach arose from this cause; and makes a very just conclusion, that it is a malady which happens much oftener than is commonly believed.

But that inflammations in the circumjacent parts may affect the stomach in the like manner, is very evident; and in the same manner, as we see inflammations of the external parts spread largely from one place to another. 'Tis therefore no wonder in a person dead of an inflammation of the liver, diaphragm, or other parts, if we find the stomach inflamed, or even gangrenous, of which many instances are furnished by *Bonetus*.

Things acrid taken into the stomach.] Daily experience shews us there are many acrimonious substances which

¹ Frid. Hofm. Opus. Pathol. Pract. decad. 2. Dissert. VII. pag. 466.

which the human stomach is able to bear without much damage, of which many are reckoned up by Dr *Swalve*, in his elegant treatise *de querelis ventriculi*. For many things that will injure the phauces by touching them with their acrimony, are received into the stomach without giving it any remarkable uneasiness. The strongest spices, pepper, ginger, and the like, barely restore the stomach to its usual warmth and appetite in glutenous and sottish persons; and even some of the more caustic sort, as the bulbous roots of *arum*, beat and mixt up with other remedies in form of pills, are often given without complaint. The caustic juice of spurge is ordered by *Hippocrates*^m to be soaked up by figs; and those figs he gave to his dropical patients before their meals. On the contrary, there are many acrimonious substances, which, not being wrapped up in any substance to correct or guard them, soon corrode the stomach, excite the most excruciating pains and dreadful convulsions, with an inflammation of the very worst kind. Even if the stomach be found much inflamed, or corroded in opened bodie, suspected of a violent death by a court of inquest, physicians generally with good reason give their opinion for some sharp poison taken by the deceased. *Wepfer*ⁿ relates many cases that serve as a confirmation to this truth. There are again other acrids, in which no sensible acrimony appears, and yet by a latent and local stimulus, that is hardly any way corrigible, will excite an inflammation in the stomach, after the most violent convulsions. Such a case *Hoffman*^o relates to us, in which eight grains of the glass of antimony were given in substance; from whence violent convulsions, with the most acute ardent pains were excited, and ended in death. The lower part of the stomach was found inflamed in this body, and the glass of antimony was plainly perceived still adhering in

^m De victu acutorum in fine Charter. Tom. XI. pag. 183. ⁿ De Cicutae aquat. histor. Cap. xx1. pag. 274. &c. ^o Frid. Hofm. Opusc. Pathol. Pract. dec. 2. Dissert. VII. pag 456.

in form of powder to the innermost coat of the stomach.

Moreover it has been observed, that an acrid matter deposited in the stomach, whether it were generated in the body, or conveyed thither by swallowing, will excite there the worst inflammations, and often produce a fatal gangrene. *Helmont*^p opened the body of a man, who died of the plague within seven hours after being invaded by the distemper, under continual vomitings and violent head-ach; but there he found the mouth of the stomach burnt up, with a black or gangrenous eschar. In another body, deceased within seventeen hours of the plague, he found the stomach perfectly eaten thro' in three places by gangrenous eschars^q. Also the observations of the great Dr *Sydenham*, mentioned before upon another occasion (§. 634.), seem to persuade us the pestilential contagion often first-roots itself into the stomach, if it be not timely exhaled from the body in a sweat, before it has drawn the stomach into a violent state of inflammation; for in a pestilential fever, great anguish with perpetual vomiting attended, which ceased as soon as a copious sweat broke out upon the body; and went all intirely off, if the sweat was continued long enough to exhale the infection received. Sometimes even the worst kind of measles and small-pox, but more rarely the former, will be attended with such symptoms as threaten a dangerous inflammation of the stomach: and therefore anguish about the præcordia, with vomiting and burning heat, after an eruption of the small-pox, afford a very suspicious sign; for there is then danger lest the variolous pustules should break out upon the stomach itself, and produce in it a violent inflammation. The same consequence has been also observed by Dr *Hoffman*^r to follow from the matter

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of

^p Tumulus Pestis pag. 842, 843.

^q Ibidem pag. 867.

^r Loco modo citato pag. 460.

of the gout, no longer deposited upon the extremities, or driven from them by imprudent treatment.

S E C T. DCCCCCLII.

BUT a phlegmon of the stomach is commonly fatal in a short time, unless it be speedily removed; and this partly from the necessary office of the stomach itself injured, and in part from the infinite number of nerves, with which it is connected.

What a necessity there is for a plentiful use of diluent medicines, for the cure of inflammations, has been largely shewn under the preceding maladies; but the stomach itself being inflamed, is irritated to reject even the lightest liquors, and of course the necessary diluents cannot be this way conveyed into the body. And besides this, the substance of the stomach being extremely nervous, painful and irritated by an inflammatory swelling, may put the whole body into great disturbance in a surprising manner, and more especially injure the functions of the brain; which *Galen*^s very handsomely observes to us in the following words; *Nam ventriculus capiti, & caput ventriculo suas affectiones transmittit, propter nervorum ab encephalo ad os ventriculi decendentium, per quos etiam sensus huic parti, quam ulli reliquarum corporis partium, acutior est.* “For that the stomach
“ sends its disorders to the head, and the head re-
“ mits its complaints to the stomach, by means of
“ the very large or considerable nerves, that go
“ down from the encephalon to the mouth of the sto-
“ mach; from whence too it is that this part has a
“ more exquisite sense than what is observed in any
“ of the other parts of the body. See what was
before said upon this subject at §. 701, where we
treated

^s De Locis Affectis Lib. III. Cap. ix. Charter. Tom. VII. pag. 438, 439.

treated upon a febrile delirium arising from filthy or corrupt fordes lodged about the præcordia; but that the vital powers themselves must flag or sink from the same cause, was shewn before at §. 661: and *Celsus*^t observes, that a contusion of the stomach is not only followed with an hiccough, and bilious vomiting, but all things taken are immediately rejected, the pulsation of the arteries becomes languid, watery, or faint sweats arise, and the extremities of the body grow cold; all which are signs of approaching death. 'Tis thus, therefore, easily apparent, that the highest danger attends the present malady.

S E C T. DCCCCLIII.

A Phlegmon of the stomach, like an inflammation in the other viscera, usually terminates either in a healthy resolution, or a morbid suppuration, a schirrhous, cancerous, or gangrenous complaint; or else it brings on death speedily with convulsions, before these can ensue.

Concerning the various endings of inflammatory maladies that invade the viscera, we have before several times explained ourselves; and it appears, that all the same consequences may obtain in the present organ inflamed.

However an inflammation of the stomach has this peculiarity, that it often kills very suddenly, by exciting the most violent convulsions. It appears from the repeated observations of *Wepfer*^u and others, that while acrimonious poisons corrode and inflame the stomach; or even when the nerves of the stomach are irritated by substances in a particular way, without such a poisonous acrimony; the most dreadful

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convulsion

^t Lib. V. Cap. xxvi. No. 15. pag. 287.
^u In historia ci-
 cut. aquat. passim.

* In historia ci-

convulsion will follow in both cases. Daily observations in practice assure us, that infants die very suddenly with convulsions from the four remains of their milk offending the stomach; but the remarkable case following^w shews plainly what dreadful complaints attend an inflammation in the stomach: for in a youth of a good habit or constitution, the pulse was sunk or depressed within the first two or three hours of the malady, and even became often intermittent; and although he was soon after three times bled, yet his extremities fell into a cadaverous coldness, an extreme giddiness and blindness followed, with a fierce delirium, and an insupportable sense of burning inwardly; the muscles of his face were convulsed, his thirst excruciating, and his horror at the sight of drinks great to a wonder, insomuch that he behaved almost like a person hydrophobous. The symptoms however abated by use of the lancet; and their return again soon after was repulsed by the same remedy; so that after eleven blood-lettings, he at last escaped clear of so desperate a malady.

S E C T. DCCCCLIV.

AS soon as ever a phlegmon appears in the stomach by its proper signs (§. 951.), it must with the utmost diligence be immediately treated by very profuse blood-lettings, repeated conformable to their urgency; to which add a drink that is very light, soft, and nourishing, prepared from ingredients that are emollient, antiphlogistic or cooling, and contrary to the productive cause of the phlegmon; and in the mean time make a good use of clysters and fomentations of the same sort: but you must be
extremely

^w Medical Essays Tom. I. No. 29. pag. 284.

extremely careful to avoid every thing that is acrid, more especially vomits.

That copious blood-letting is the principal remedy in the beginning of inflammation was before often shewn, as well under the cure of general inflammation, as in the local inflammatory maladies that we have hitherto considered; and the particular case last cited plainly shews the important usefulness of repeated venesections in the distemper before us, surrounded with so many dreadful symptoms. We have likewise sufficiently applauded the use of diluent drinks, with the addition of nitre, honey, rob of elder-berries, and the like. But here there is a greater difficulty, to avoid irritating the inflamed stomach by the least acrimony, whereby all the symptoms might be increased; and, therefore, although these remedies are with so much reason applauded for the cure of inflammation, we hardly dare administer them; or at least they must be given in a manner so much diluted, that, if dropt into one's eye, would give it no offence by acrimony. A lenient drink of this sort is proposed in the *Materia Medica*, at the number of the present aphorism; which yet is by the wood-forrel, and currant-gelly, rendered too sharp for the stomach to bear, when it is under a violent and most painful inflammation; however, the yelk of a fresh egg will generally here obtund the acrimony of the other ingredients, enough to render it supportable. But the fresh made whey of new milk, with the decoctions of barley, oatmeal, or bread, and the like, with the yelk of a fresh egg, will afford all the sufficient nourishment that may be here required. A weak chicken-water, or decoction, is also very soft, or light, and will very well bear ten or twelve grains of nitre to be dissolved in each pint of the clear liquor. But another point is also to be regarded here, namely, to give it the patient in such

very small quantities at a time as may not oppress, or offend his stomach; from whence all his complaints might be increased; but if the cause be known which by its acrimony corrodes and inflames the stomach, remedies of an opposite disposition to the said acrimony are to be given; as for example, earthy absorbents, with oleagenous and saponaceous medicines, for the acid acrimony in the stomach of convulsed infants, which both sooth the pain and weaken the acrimony at the same time.

But since here we are unable in a short time, to convey any great quantity of liquors to the blood, for diluting and attenuating; therefore, other ways are also at the same time to be attempted. With this view then, warm-bathings, fomentations, epithems, and especially clysters often repeated, and long retained, are usefully applied, to be drank in by the mouths of the bibulous veins.

Now it is hence very easily apparent what an increase of all the complaints must ensue by filling the stomach in this case with the ordinary medicines used in vulgar practice, which for the most part recommends spirituous, bitter, and hot spicy things, that are of good use only for a cold distemper of the stomach, which yet are by the less knowing often unhappily used to quell this phlegmon. The case goes still worse with such a patient as unhappily falls under the rule that some physicians establish and follow; namely, *that a vomiting is to be cured by vomits*, (see §. 659.). For such perceiving that every thing taken in is again immediately rejected, they directly conclude a malignant foulness is lodged in the stomach as the cause of the malady, and, therefore, attempt its expulsion by giving vomits. Even Sydenham candidly confesses (see the citation from him at §. 634.) he had been led into this mistake; and from observing so good effects from the use of emetics in the beginning of autumnal and epidemic fevers, where after blood-letting premised, these seasonably

sonably removed the anguish with the sickness and reaching; but this practice he found was attended with the very worst consequences, in pestilential and ardent fevers that began with an inflammation upon the stomach. The late celebrated Dr *Hoffman** relates a notable case, that points out the mischievous effects of vomits, in such a phlegmon of the stomach. A prelate of Halberstadt in perfect health fell into a most ardent fit of anger and concern at some affairs; from whence, with the drinking of heated wine, he was upon the following day afflicted with extreme pain and anguish, about his stomach or præcordia, reachings to vomit, and a burning heat in his stomach: the physician called to him administered an emetic prepared of the golden sulphur of antimony, which obliged the patient to vomit thrice, but with a great increase to all his complaints, and within ten hours after he expired with convulsions. Upon opening the body, several gangrenous spots appeared in the bottom of the stomach, partly red, and partly black: so that the inflamed parts, by such rough shocks and compressures in the strainings to vomit, were now converted into a gangrene.

S E C T. DCCCCCLV.

IF such a phlegmon of the stomach comes to a suppuration, numerous mischiefs ensue, more especially sickness with reachings, vomitings and pains; which, when the cause is not known seem both surprising, and are very rarely well cured: but when the malady is once known (§. 951.), its symptoms require to be treated under the same method of cure (§. 402, to 413.) that was before given for an abscess.

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* Frid. Hofman. Opusc. Patholog. Pract. decad. 2. Dissert. VII. pag. 454.

Altho' the cure of an inflammation is always the most desirably to be performed by a mild resolution or removal of its productive cause; yet this is not always practicable, either from the magnitude or violence of the phlegmon itself, or from unseasonably neglecting to give timely the proper treatment which the malady requires in its beginning: in consequence of which, therefore, a suppuration ensues; which is indeed a much better and more desirable way of terminating the phlegmon, than any of the others that are now left for it. But since at the time when a suppuration is forming from a phlegmon, all the symptoms increase (see §. 387.) it is evident enough with how many urgent evils the patient must grapple, while a suppuration is forming in the stomach. For then, after supporting the malady for some time, there follows a purulent vomiting, often intermixed with a good deal of blood from vessels ruptured or eroded, by which discharge the symptoms are relieved; altho' sometimes, the stomach being quite eaten thro' by the ulcer, an incessant hæmorrhage and death directly follow. There is a case of this kind related to us in the *Mem. Acad. of Paris* y, of a man who had been troubled with a continual pain in his stomach for three weeks; he had a heart-burn or cardialgia with frequent sickness or reachings, and in the latter days of his life discharged much blood both upward and downward. After the death of this person, the celebrated *Littre* found a round ulcer in the stomach of a quarter of an inch in diameter, and half the 12th of an inch in depth, seated within an inch and half of the pylorus: and he found a great quantity of blood extravasated into the stomach and intestines. Sometimes an ulcer of this sort, by causing the stomach to grow to the peritonæum, opens outwardly, and leaves a fistula, thro' which some parts of the aliments escape, during the life of the patient. I visited a woman of three-

y *Academ. Royale des Sciences l'année 1704. Hist. pag. 36.*

three-score, who had supported such a fistulous ulcer for twelve years past, without any great damage to her health; and I observed, that the contents of the stomach came out in part thro' the opening of this fistula. But a case much more wonderful is to be read in the *Journal of the learned*^z, of a girl, the contents of whose stomach discharged themselves thro' the opening of an abscess in the left hypochondrium, together with some carious fragments of the ribs; even the discharge was here so copious and sudden, as obliged her to be feeding almost every quarter of an hour, to satisfy her hunger and great weakness; and if the very ample opening of this ulcer was not closed by suitable compress and bandage, all the nourishment that was taken in, immediately flowed out thro' it. But by degrees the opening of this ulcer afterwards contracted itself, and she survived it a long time, in such good strength as to undergo the labours usual in a country farm; in which manner, she supported her malady, for the space of twenty-three years.

If the signs of a violent inflammation in the stomach have gone before, bad enough to give a reasonable suspicion of a vomica, or abscess in the stomach, an emollient decoction of marsh-mallows, greater-comfrey roots, lin-seeds, &c. are to be given often, and in very small draughts, to soften the vomica, and promote or expedite its rupture into the stomach: and when the purulent discharge either upward or downward, followed with a relief of the symptoms, show that the abscess is broken, it must then be treated first with the mildest detergents or cleansers, and afterwards with the necessary consolidants or healers, as we before advised for the cure of an abscess, at the numbers referred to in our text. But while such an ulcer is healing, care must be taken not to load the stomach with much or with solid nourishment; by which the parts will be drawn
afunder,

^z Journal des Scavans Mois d'Aout 1737. pag. 534.

asunder, rather faster than they were closed. But it appears plainly enough, that the cure must be here very difficult, since the ulcer will perpetually be watered with every thing that is swallowed, and likewise be constantly agitated by the peristaltic motion of the stomach: for which reasons nothing but flesh broths, boiled with rice, barley, bread, &c. can be here used: altho' nourishing clysters may perhaps well enough sustain the patient's strength for some days, when the ulcer is cleaned, that by giving rest to the stomach, it may be the sooner consolidated.

S E C T. DCCCCLVI.

IF the phlegmon generates a schirrhus, or a cancer of the stomach; by those it excites the most excessive vomitings, and intolerable pains, which become exasperated by every thing taken into the stomach, even in the least quantity; which complaints are rendered fixed, longer lasting, or more roughly conditioned, from all medicines.

Another way of terminating an inflammation is here proposed to us, of which we have treated several times already under the maladies preceding. Many patients of this kind offer daily to the physicians care, who would think themselves happy if they did not lie under a daily necessity of taking nourishments: for these give them the most troublesome pains of the stomach, either immediately upon taking them, or else within an hour or two after their repast; but instead of receiving any relief from the most boasted stomachics, their pains become increased, as they also are from every thing sharp or strong tasted; but are rendered the worst of all by rough emetics and purgatives. I have visited several of these miserable persons, who, impatient of their pains, have
within

within some hours after feeding, put their finger into their fauces to vomit all up and give a relief to their anguish. But in all such cases we have good reason to suspect a schirrhous or cancer in the stomach, or in some of the parts adjacent; the truth of which is confirmed by the opening of the deceased bodies. Some years past I saw an English lady afflicted with such a malady, and consulted for her (with my very good friend Dr *Godfrey du Bois*, professor of physick and philosophy in the university of Franequer, whose untimely death I much lament) in order to relieve the miserable complaints with which she had been afflicted for some years. But all endeavours were here fruitless; and she could only gain some temporary respites, by the softest medicines with opiates. When her body was opened, the stomach appeared no larger than a goose-egg; but the pylorus, with the next part of the duodenum, and pancreas continued from it, were become schirrhous and extremely hard. In the body of a man who had been long afflicted with pains of the stomach, joined with vomitings and faintings, the celebrated *Ruysch*^a found a schirrhous swelling in the bottom of the stomach, almost as large as one fist, which was inwardly filled with a tenacious, and black coloured matter, like that which he discharged by vomiting a few hours before he expired. Many of the like sort may be seen in *Bonetus*^b.

Now such a schirrhous, so long as it continues in a mild or dormant condition, may produce numberless mischiefs by the weight, pressure and distraction that it makes upon parts so extremely nervous or sensible; but when in process of time, or by the use of sharp medicines, it shall have acquired a degree of cancerous malignity, dreadful pains arise thence; as may be easily conceived from the reasons before given where we treated professedly upon a schirrhous

^a Observat. Anat. Chirurg. XXXIX. pag. 38.
Prætic. Lib. III. Sect. VII. pag. 68. &c.

^b Anatom.

schirrhous and a cancer. A remarkable case of this sort is described by the *celebrated Petit*^c. In a woman seized with pains and a fever, there was sickness and vomitings attended, with a colicky pain; but by repeated blood-lettings, and other suitable medicines prescribed by a very skilful physician, she gained some relief, but neglected the remains of her malady, not yet cleanly extirpated, and ill-observed the rules of her diet. Remaining long in so languishing a condition, she at last consulted a quack-practitioner, who by strong emetics and the sharpest clysters (the last being rendered more acrid from mild ones at first used) reduced this unfortunate patient to the most miserable condition. Afterwards taking better advice she gained some relief, but at length perished of her malady. Upon opening the body, part of the stomach was found firmly cohering with the adjacent large intestine, called the colon, and was there together with that grown into a large *schirrhous* substance: upon cutting open the stomach, appeared a very foetid and black-coloured ulcer of two inches in diameter, and which growing to the integuments along with the said *schirrhous*, endeavoured to make a way outward for the discharge of its ichorous matter. Many particulars worthy of observation are suggested in this history; but what is here related suffices to shew, that a *schirrhous* of the stomach may degenerate into a cancerous ulcer.

S E C T. DCCCCLVII.

SUCH a *schirrhous* or cancerous malady can only be quieted by the most lenient remedies, such as we formerly advised for relieving the like disorders (§. 490, 491, and 506, to 512.): but a cure is here rarely to be effected; altho' the waters of the mineral spaws are extremely

^c Academ. Royale des Sciences l'année 1716. mem. 395. &c.

tremely efficacious towards that intention in these complaints.

Every thing that was formerly recommended for the cure of a schirrhous and cancer, under the above-cited aphorisms will be here of service; excepting what relates to the local applications, for schirrhous or cancerous complaints seated in external parts of the body, which the nature and situation of the stomach will not admit.

The principal relief is in the avoiding of every thing, both in diet and medicine, that may irritate or exasperate the complaints: flesh broths boiled with rice, and emollient pot-herbs are here the chief nourishments; also the yolks of eggs with the cream from barley or oat gruel, given in small quantities at a time; from whence great relief is often perceived in these painful and chronical maladies of the stomach. But where a schirrhous of these parts is recent, a course of Venice-soap, plentifully used, has been found of service, provided the patient takes to the amount of two drams in every day for several months: for this is the highest resolvent, and likewise tolerably mild; which yet must be immediately laid aside, if the pains or vomitings increase upon taking it into the stomach: for we have then reason to fear, the schirrhous is already degenerated into the nature of a cancer, which will not bear this efficacious medicine. The medicinal spaw waters, that have no great acrimony, and abound with an extraordinary resolving power over concretions or indurations in the animal body, will be here also serviceable.

From what has been said, it plainly enough appears, what prudent caution is necessary in the treatment of these chronical pains of the abdomen, which become exasperated by aliments taken into the stomach.

S E C T. DCCCCLVIII.

FROM what we have hitherto proposed (§. 914, to 958.), the diagnosis, prognosis, origin, nature, effects, palliation, and cure of a like inflammation, suppuration, gangrene, schirrhus, or cancer of the spleen, pancreas and omentum, may be evidently derived.

We come now to the consideration of several other inflammatory maladies, that still remain in other viscera of the abdomen, related to the portal system; but here all that we have before advanced might be again repeated. For the phlegmon here only takes up a different seat or residence; and if the situations or descriptions of the parts themselves be first well known from anatomy, and their functions as well understood from physiology, there will be no difficulty in forming a diagnosis of these complaints. All the ways therefore of terminating an inflammation, may here again take place; and their treatment likewise will require to be conducted after a similar manner. It may then suffice in this place only to survey in few words the principal differences which authors of the best credit, have in these points remarked. But concerning an inflammation of the bowels or intestines, we shall afterwards treat professedly, in a distinct chapter; because in that malady there are many particulars to be observed, which relate to those parts only; and for the same reasons we shall also treat separately of a nephritis or inflammation in the kidneys.

Of the spleen.] Distempers of the spleen are very often mentioned to us by the ancients; but with such circumstances as afford good reasons to suspect they have sometimes described the distempers of other parts likewise under this title. For the left flexure
of

of the colon lies immediately contiguous and beneath the spleen; from whence indurated fæces, and flatulencies obstructed by them, may occasion pains and swellings in the region of the spleen, altho' there may be no fault in the spleen itself. Thus *Trallian*^d writes concerning *an inflation of the spleen*; and for the cure of that malady recommends carminative remedies, which have a very remarkable efficacy for dispersing flatus: but it is easily apparent, that the capacity of the stomach and intestines are the only proper seats of flatulencies. And thus even the cause of those acute pains which are by *Hippocrates*^e said to arise up to the side, breast, shoulder, and clavicle, from the excessive use or gorging of green figs, apples, grapes, new wine, &c. is by that great author laid to the door of the spleen. But we know all those eatables are very flatulent, or inclined to a fermentation that breeds air, by which they offer injury to the stomach and intestines before they can get into the blood to affect other parts; and for that reason *Hippocrates* recommends for the cure, such things as evacuate the offending matter both upwards and downwards. Moreover he observes, that within the same day the spleen will be both great or swelled, and afterwards contracted less again; that it also occasions, during the first state, a most acute pain; but after the swelling is become soft or subsided, there is no pain. But it is apparent enough, that the spleen being obstructed or inflamed, can be subject to no such sudden changes; altho' the colon, in that part of it which lies contiguous with the spleen, may often enough be the seat of those flatulent tumours, which suddenly appear, and as suddenly subside. If again we consider, that the ancients often mention schirrhosities of the spleen very quickly cured,

and

^d Lib. VIII. Cap. xi. pag. 479. vide & Galen. medend. method. ad Glaucon. Lib. II. Cap. vii. pag. 379. Charter. Tom.

^e De Internis Affectionibus Cap. xxvi. Charter. Tom.

vii. pag. 657.

^f Ibidem Cap. xxxii. pag. 662. & Cap.

xxv. pag. 663.

and that some of the moderns do the same ; there will be hardly any room to doubt but those hard swellings arose from indurated fæces lodged at the splenic flexure of the colon ; since a schirrhus cannot be so suddenly removed, but for the most part even stubbornly withstands the most powerful remedies, as all who are versed in practice too well know.

Again, as it was the opinion of the ancients that the spleen made a storehouse of atrabiliary humours, therefore they were induced to describe melancholic disorders under the title of affections of the spleen ; to which head they also referred the scurvy, as we shall shew more plainly hereafter, when we come to treat of those maladies.

But in the mean time it must not be denied, that the spleen is sometimes invaded with an inflammation ; since from the opening of deceased bodies it is plainly shewn, that the effects of inflammation have been observed in the spleen : but *Trallian*^s has well remarked, that the spleen is less liable to inflammation than the other viscera. But the principal signs of an inflammation in the spleen are, an acute continual fever, with a pain in the region of the spleen, extending up sometimes as high as the shoulder, breast, and clavicle of the affected or left side. Now although it is usual for the injured function to point out the parts affected in distempers, yet as the spleen appears to be only a subsidiary appendage for the service of the liver ; we are therefore not here able to collect any accurate signs from an injured function, because the injury of the spleen is but slowly and weakly transferred to shew itself by injuring the liver. For anatomical experiments upon living animals teach us, the spleen may be intercepted from its office by a ligature upon its vessels, or may be even wholly cut out, and yet the beast will afterwards survive

survive long enough, without signs of great damage to their health^h.

It seems not improbable that sometimes an inflammation of the spleen is taken and treated for a pleurisy under that denomination; and commonly with no great damage, as the cure of a pleurisy is likewise suitable for that of an inflammation of the spleen. The celebrated Dutch physician of the Hague Dr *Antony de Haen*, (to whom I gratefully acknowledge myself indebted for the communication of many useful and practical observations taken from the opening of deceased bodies) has among his other cases sent me one that serves to confirm the present opinion. A man aged thirty-four years was treated by his physician for the cure of a pleurisy, and with such success that the fever and pain of his left side were so far reduced by the second day of the malady, that the patient thought himself almost entirely cured, and neglected to observe any further cure or regimen, but with an event that at last proved fatal to him; for he lived afterwards in a languishing condition, and confessed he always perceived an obtuse pain in the part that was first affected. Within a few weeks after his first illness he had a considerable swelling in his right leg, that again disappeared of itself; and another of the like sort shewed itself after that in the right side, and of a considerable magnitude, that again spontaneously disappeared. Lastly, a like tumour appeared in the left thigh, and while it there continued another swelling formed itself upon the inner side of the right arm, being soft and larger than one's fist. At length a dysentery, an ascites, and anasarca, with weakness, and death closed the scene.

At the opening of the body of this man after death were observed the following appearances; the abdomen was swelled, and every where livid, but

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^h Malpig. de Liene Cap. vi. pag. 114. Brunner. de Pancreate. In Praefat. pag. 9.

more especially on the left side; the omentum was very short, hardly two inches long, and without fat. All the intestines were extremely turgid, and inflamed throughout their whole extent, both large and small ones; and in several places they were gangrenous; nor was there any considerable quantity of lymph within the capacity of the abdomen. The stomach also was very turgid, and for a large part gangrenous in the upper and left portion of it: the pancreas small and flaccid; the mesentery bloodless, but entire; in the mesocolon appeared a great many small friable bodies of a dark greenish colour, in bulk, figure, and appearance very much resembling the buds of capers, as they are usually served, pickled in vinegar, to the table. The liver was extremely large, and in its lower part of a darker brown colour than is natural. The spleen was in its lower part concreted to the peritonæum, full of a thick, white, and abundant matter; there was also a great quantity of like matter which floated in the water of the abdomen. The tumour of the arm being opened by a lancet, appeared full of the like matter, both as to colour and consistence, with what was observed before in the spleen. The lungs in several places cohered with the pleura.

This whole history informs us, that an inflammation of the spleen, being by the neglect of the patient not compleatly cured, degenerated into a supuration; and that the matter thence absorbed was by various translations, or metastases, deposited upon divers other parts, until at length the whole mass of blood was corrupted with a purulent cacochymia. We are also to observe the bulk of the liver is here more than usually increased, because the spleen was now wasted, and its function abolished by a purulent tabes; which is also what *Malpighi* and *Brunner* have observed in animals that have had their spleen cut out, or rendered useless by intercepting the vessels thereof by ligatures.

But

But *Hippocrates*ⁱ seems also to have observed a suppuration of the spleen; for when the spleen is very large and swelled outwardly, he orders to open it, by cauterisation, for the discharge of its matter, as he had before advised for a vomica, or abscess in the liver. And in another place, before cited from him, at §. 488, in treating upon splenic maladies, he observes, that the distemper sometimes degenerates into a dropsy, and the patient goes into a consumption; whereas those have been cured, who have had the suppurated spleen opened by cautery; but that sometimes those who have the great or swelled spleen hard or schirrhous, live to an advanced age. But nothing can give a better invitation for physicians to make diligent researches into the writings of the ancients, than the repeated lights which their observations reflect upon the most difficult cases, since it is experienced that hardly any thing difficult or doubtful can occur in practice, but they have something to say upon it. We see in this last case, or history of a phlegmon in the spleen, there was a fatal suppuration followed contrary to the patient's expectations, who believed himself well: but this is what *Aretæus*^k has fairly observed to us, when in treating upon the present malady he says, *Incrementi autem notae sunt febres, dolores & horrores: multoties enim remittunt, post brevem autem calore rigore & dolore vacant: hac de causa interdum in splene abscessus latuit: rarum enim & sensu carens etiam in sanitate viscus.* “ But the signs of an enlargement in the
“ spleen are fevers, pains, and shiverings, which
“ frequently remit; for after a short fever-heat,
“ with a cold chill and pain, the distemper ceases
“ for a time; and from this cause or malady an abscess sometimes lies concealed within the spleen;
“ which even in its healthy state is a very pulpy or

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“ tender

ⁱ De Internis Affectionibus Cap. xxxii. xxxiii. xxxiv. xxxv. Charter. Tom. VII. pag. 662—665. ^k De causis & signis Morbor. Diuturn. Lib. I. Cap. iv. pag. 43.

“tender viscus, and almost void of sensation.” But the event or termination of the present malady is remarked by *Hippocrates*^l, where he says, *qui lienosi dysenteria corripuntur, iis, oborta longa dysenteria, hydrops aut lenteria succedit, ac intereunt*. “Those who have a diseased or suppurated spleen, are invaded with a dysentery; and after a long continued dysentery follows a lenteria, or a dropsey, which carries off the patient.” Yet soon after he pronounces, “a dysentery to be serviceable, when it succeeds a disease of the spleen:” *lienosis dysenteria succedens bonum*^m. But we know matter lodged in the spleen may gain a ready passage into the liver by the splenic vein; and we have already seen (at §. 950.) that a copious dysentery which soon terminates, happily carries off distempers of the liver. These two prognoses are again more distinctly to be read in *his coan* presages, thus; *dysenteria non longa splenicis utilis: longa vero, mala: desinente enim si hydropes aut lenteriae fiunt, lethale*. “A short dysentery is profitable in splenic maladies; but one of long continuance is bad; for when this last ceases, if a dropsey or a lenteria ensues, the distemper is fatal.”

But a schirrhous of the spleen is what we still much oftener meet with in practice than an abscess; for which reason *Aretæus* has pronounced it the social, or familiar distemper of the spleenⁿ. Now such a hard tumour by its weight and pressure may greatly injure or distract the circumjacent parts, and excite the most violent pains. The celebrated *Ruyfch*^o found a spleen in the body of a woman that was eight times larger than it ought naturally to be; for by its weight, which was in a pair of scales found equal to four pounds, it had descended even into the pelvis.

^l Aphorism 43. Sect. VI. Charter. Tom. IX. pag. 275.

^m Aphor. 48. Sect. VI. Ibidem pag. 281. ⁿ De causis & signis morbor. diuturnor. Lib. I. Cap. iv. pag. 43. ^o Observat. Anatom. Chirurg. LXII. pag. 58.

I have myself twice seen spleens that were so schirrhous, and much enlarged, as to prolapse down into the pelvis; and there are a number of the like cases collected together in a treatise on the subject by *Drelincurt* ^p. Nor is it so surprising that the spleen, having increased its bulk and weight, should by its own gravitation insensibly elongate the vessels downwards, so as to descend to the bottom of the abdomen; since more rare observations have shewn us it may also ascend, or be thrust up into the thorax: for in this condition it was found by *de la Motte* ^q, in a man that became dropsical, after an intermitting fever of long continuance. In the deceased body of this patient, the spleen being greatly enlarged in bulk, had thrust up the diaphragm in the left side after such a manner, that there was but a small space left betwixt the spleen and the arm-pit. But when the spleen also dwindles, or lessens in bulk as it hardens, the malady is then probably with more ease supportable. In a man of threescore (who never had complained of any pain or other malady, that could give a reasonable expectation for any considerable alteration in the spleen) the celebrated *M. Littre* ^r found the spleen entirely petresied, but of no greater weight than an ounce and half; and yet this man died of a violent death; so that he might probably have longer survived this state of the spleen.

But when a schirrhous of the spleen degenerates to a cancer, it then eats away all the parts around it; and after insupportable torments, having corroded the larger vessels, it produces an hæmorrhage that is suddenly fatal. Such a fatal hæmorrhage, which discharged itself by stools, was observed by *Drelincurt* ^s the elder, in a woman whose cancerous spleen had corroded through the subjacent colon.

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OF

^p Differt. Anat. Pract. de Lienosis Cap. xvii. Opusc. Omn. pag. 768. ^q Traité complet de Chirurgie Tom. II. pag. 169, 170. ^r Academie Royale des sciences l'année 1700. hist. pag. 50. ^s Differt. Anat. Pract. de Lienosis Cap. xiv. Opusc. Omn. pag. 763.

Of the pancreas.] As this large salival gland lies extended betwixt the two plates of the mesocolon, with one end of it cohering or opening into the duodenum, where the intestine is incurvated and continuous with the pylorus, from whence it reaches transversely, and behind the stomach almost to the spleen, in which course a part of the duodenum interposes betwixt the pancreas and vertebræ of the loins; therefore, it is apparently very difficult to distinguish disorders of the pancreas, since it is not so easily rendered the object of our touch as the spleen, and whenever it is swelled must of necessity compress the stomach and duodenum. Therefore an inflammation of the pancreas may sometimes be easily confounded with a like malady of the stomach or duodenum; but then no damage can accrue to the patient from such a mistake, because they all require to be treated after the same manner, for a cure. But since the use of the pancreas is to separate a liquor from the blood, that very nearly resembles the saliva, which it pours into the duodenum; therefore an injury following in the function of this organ, cannot be so suddenly perceived, as to derive thence any diagnostic signs of such a malady being present. For it was by mere experiments that the celebrated *Brunner* was directly able to confute the idle *Sylvian* hypothesis of a fermentation or effervescence, betwixt the bile and pancreatic juice, mixing together in the duodenum; to the due performance of which effervescence the *Sylvian* party ascribed almost the whole business of chylification, and derived the origin almost of every disease from the same spring. It appears also from the same experiments that refuted *Sylvius*, that the function of the pancreas being intercepted, by destroying or tying up its duct, or by cutting out the principal part of it, (since an entire extirpation of the whole is impracticable without killing the beast) yet the dogs survived the operation without any notable

table damage to their health^t. But that all tumours of the pancreas, inflammatory, suppurative, schirrhous, or cancerous, may dreadfully affect the communicating or adjacent parts, is to every body self-evident. Sometimes the pancreas being schirrhous has so much enlarged itself as to become outwardly perceptible by the touch, as in the case we formerly related at §. 488: but sometimes, even when its bulk is considerably increased, there appears no remarkable swelling outwardly. This is confirmed in *de Graaf*^u, by the case which *Riolan* gives us of the famous *Augustin Thuanus*, who being of a melancholy habit, was for four years troubled with pains about the region of the colon, with a weight or oppression felt about the stomach, that caused him to complain whenever he stood upright or walked; yet there appeared no swelling in the hypochondria. In the deceased body of this learned historian, the liver was observed round almost like a globe, stuffed and impacted with a kind of slimy Paris-plaster, somewhat like suet. But the pancreas in bulk and weight was equal to the liver; schirrhous throughout, and filled with many lumps like pigeon-eggs. The spleen was so small, that it hardly weighed an ounce. *De Graaf* has in the same tract collected together many other cases of the pancreas, ulcerated, schirrhous, cancerous, calculous, &c. from whence all practising physicians may have good reason to suspect the like disasters in chronical pains of the abdomen; and may thence be prudently led to administer only the mildest remedies, and to avoid the rough or acrid that may exasperate all the complaints.

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Of

^t Brunner. *Experim. nova circa Pancreas* pag. 12, 15, 16, &c. & a pag. 23, ad 56, uti & apud eundem Brunnerum de glandulis duodeni pag. 118. ^u Regner. *de Graaf de succo Pancreat.* Cap. vii. pag. 108, &c.

Of the omentum.] The caul we know from anatomy is extended over the intestines, from the bottom of the stomach, down as low as the navel; and sometimes it descends even much lower: but sometimes it exceeds not the bounds of the epigastric region by its extent; for there is very great variety observed by anatomists in regard to the various dimensions of this part. But altho' the omentum is for the most part of it extended loosely from the stomach before the intestines, yet it is also connected both to the vessels which enter into the liver, and also to the duodenum, colon, pancreas, and spleen; whence various maladies may ensue, according to the various parts of the omentum injured by the disease: from whence likewise there will be a difficulty in forming a diagnosis of the said malady. Moreover the most undoubted observations inform us, that a very large part of the omentum coming out thro' wounds of the abdomen has been cut off, and the patient has survived it without any notable damage to his health. Even *Galen* ^w extirpated almost the whole omentum from a wounded gladiator, who was yet speedily cured, and found no other inconveniency than that of being obliged to keep his belly warmer from the cold than before. But frequent cases of the same sort in our modern wars also inform us, that a very considerable part of the omentum has been often cut off, even without that or any other inconvenience following. From whence it is evident, that the signs diagnostic of a phlegmon, and its consequences in the omentum, are not easily to be derived from any injury of the functions of the omentum: Even *Ruyfch* ^x has often observed an intire consumption of the whole omentum, both in brute animals, and in men, who have died either by an acute quinsy, or by some violent death, altho' before death there was no reason appeared to expect

^w De usu partium Lib. IV. Cap. ix. Charter. Tom. IV. pag. 377.

^x Observat. Anatom. pag. 23.

expect any such deficiency. And in chronical distempers, more especially in dropfies, the omentum is often found wasted or dissolved, which is not very much to be wondered at.

If a phlegmon of the omentum turns into a supuration or a gangrene, the most dreadful mischiefs ensue (§. 912.) after the matter or gangrenous ichor has been poured out into the capacity of the abdomen.

But where the omentum is hardened into schirrhous tumours, it may then be the cause of numerous mischiefs by compressing or distracting the parts to which it is either contiguous or connected; more especially when the schirrhous of the omentum is of a considerable bulk, for otherwise it does but little harm. It sometimes happens in women, who have well recovered from their lying in, that a hard oblong swelling arises in the abdomen: and sometimes such swellings or tumours will stay with them for many years, without any pain or uneasiness, more than the incumbrance of their bulk. *Ruyfch* ^y found in an opened body such a tumour, that was schirrhous and formed by the omentum, thickened to the compass of near two inches, and extended in breadth for near three inches, and to a span and half in length: but the omentum seems to be thrust up in gravid women, by the distended womb, by which and the other moveable viscera being compressed into a convoluted heap, it may then concrete and form such an indurated tumour. For such a tumour of the omentum has been found in the abdomen, even of a bony consistence ^z. And there is still a wonderful case described by *Dr Haen* ^a, who is so eminent at the Hague, as we before observed; for in a dropfical body he found the omentum grown together into a compact and very great mass, of two inches in thickness throughout,

^y Observat. Anatom. Chirurg. LXIII. pag. 59. ^z Academ. Royale Sciences l'année 1732. Hist. pag. 48. ^a Histor. Anatom. medica morbi miri incurabilis, &c. Hagae Batavor. 1744. in 8vo.

out, except towards its middle, where it was somewhat slenderer, and this monstrous omentum was so grown into one with the stomach, colon, duodenum, and jejunum, as to be wholly inseparable from them without tearing or cutting.

But the cautions for the cure or treatment of such mischiefs of the spleen, pancreas, and omentum, may be easily deducted from what we a little before proposed for the like maladies of the stomach, liver, &c.



Of an INFLAMMATION in the BOWELS, or I N T E S T I N E S.

S E C T. DCCCCLIX.

TH E intestines, but more especially the small ones, are like the stomach, very frequently invaded with an acute inflammation in their membranes, either from the common or general causes of a phlegmon operating upon, or particularly transferred to these parts; or it may be likewise from something acrimonious taken into the body, under the form of drink, foods, preserves, medicines, or poisons, which being conveyed into the intestines are retained and arrested betwixt their valve-like folds; or it may again spring from some morbid matter, acrimonious, putrid, foetid, purulent, ichorous, gangrenous, bilious, or atrabiliary, translated or coming from the œsophagus, stomach, liver, spleen, pancreas, or omentum, to these nervous parts or membranes, and there settling so as to corrode

corrode them ; or lastly, it may be from some violent cramps or convulsive constrictions foregoing in the bowels, and either creating an inflation of them, or suppressing the motion by which they drive on their contents, and by that means producing an inflammation.

That the general causes of an inflammation before recited (§. 375, 376, and 377.) may take place as well in the intestines as in others parts, is sufficiently evident, since anatomy has plainly shewn us the numberless small arteries that are distributed through their membranes. Moreover in the history of fevers (§. 593) it was observed, that a fever often terminates in another distemper, when the humours, vitiated or changed by the fever, are settled upon some certain parts of the body, where they produce new maladies. It was there proved by many examples in practice, that acute inflammatory maladies differ very much one from another, in respect to the parts and emunctories towards which the matter of the fever inclines to be settled. Sydenham^b observed for above three years successively, the nature of an epidemical distemper of that time was generally inclined to deposite the febrile matter, towards the intestines, causing sometimes dysenteries, sometimes dry-gripes, and sometimes the most violent fits of the colic and iliac passion. But this distemper arose with a fever, which after raging a few hours, ended in the most severe pains of the bowels. And even he affirms, that the iliac passion can only be properly so called when acrid or malignant humours are thrown by a tumultuous fever upon the stomach and intestines : for if the said distemper should arise from an hernia, indurated tæces, or the like, he thinks it ought rather to be called a false or *bastard iliac passion*^c.

But

^b Sect. IV. Cap. vii. pag. 258, &c.
pag. 90.

^c Sect. I. Cap. iv.

But that the smaller intestines are oftener inflamed than the larger, appears confirmed to us by practical observations; for in the present malady the intolerable pains are usually seated in the umbilical region, or middle part of the abdomen, where only the small intestines are naturally situated. And probably the large intestines are constitutionally less liable to inflammation than the small, as they serve for collecting and retaining the gross, putrid and more acrimonious fæces. Moreover every thing acrid taken into the stomach, or else rendered acrimonious therein by too long stagnation, must spend their violence first upon the smaller, before they can reach to the larger intestines.

Now altho' every thing that stops up the intestinal tube, by impeding the free passage of the contents, may cause inflations and distentions of the bowels, and may therefore be the remoter causes of inflammation in them, yet unless there be also great acrimony applied at the same time, they rarely produce this acute distemper, but rather more stubborn and chronical maladies, like the cases mentioned (at §. 719.) where we treated upon the various matters that might be sometimes evacuated from the body in a diarrhæa. But if humours acrimonious are also joined or intermixed with such a vitreous or ropy phlegm, then the intestines may be easily inflamed, unless the said congestion be speedily expelled from the body, or the acrimony thereof corrected. Thus *Galen* (see §. 71.) experienced in himself the most severe pains of the abdomen, as if his body was bored through; but by a clyster injected of the infused oil of rue, he discharged by stool an humour that resembled the colour and consistence of melted glass, after which his pains ceased. But such a phlegmatic and inert congestion of humours gives no pain, unless there be an intermixture of some acrimony. And therefore a frequent cause of inflammation in the bowels is the acrimony of such matters as are lodged

in the cavity of the intestines. But such an acrimony must be derived either from what is swallowed into the stomach, or from a matter formed in other viscera, and translated thence into the bowels; both which we are to consider.

Drinks, foods, preserves.] What mischiefs may follow from the drinking fermentive liquors, in which the force of fermentation is often locked up, or suppressed by exclusion of the air, was before shewn (at §. 646, and seq.) where we treated upon flatus and belchings. For during the work of fermentation there is a wonderful stimulus produced, even in substances that were before the freest of all from acrimony (see §. 605, No. 11.) From thence frequently arise dreadful cramps or convulsions in the stomach and intestines, which, if not speedily relieved, end soon in a phlegmon, and a fatal gangrene or mortification in the bowels. Sometimes also liquors are drank, which are either acid in themselves, or soon become sour enough in weak bodies to injure the intestines by their acrimony: such are ale that is become vapid or flat with long keeping, or wine that is become sharp or sour, &c. But such foods are likewise often taken into the body, as by their natural or acquired acrimony, may be no less mischievous: for thus the milk, taken by infants, is often turned sour, and clogs their bowels with a curd or cheese-like coagulum, which growing more acrimonious by arrestment corrodes and inflames their tender membranes; and from this cause, what numbers of infants perish (with an involution of the gut or iliac passion,) after the most dreadful gripes of the belly, all who are versed in practice cannot but be well acquainted. But if we examine into such things as are preserved by pickling and salting before they are taken into the stomach, we shall find they are often of so strong a nature, as to corrode even the outward skin; for among these come the hottest spices, garlic, horse-radish, &c. in so much that it seems

seems wonderful the stomach is not oftener inflamed by them than upon experience we observe; and which would doubtless be oftener the case, if the alimentary passages were not so well guarded with a thick and soft mucus throughout their whole surface; while the thirst excited by such acrid ingesta, gives an admonition to qualify and dilute them by watery drinks, by which their excess of acrimony may be duly weakened. Consult here what has been said at §. 586. No. α or 1.

Medicines or poisons.] Altho' these commonly affect the stomach first, and for that reason were before considered (§. 951.) as the cause of a stomach-phlegmon, yet from a copious intermixture with the alimentary contents of that receptacle, they but little affect it; but having once reached the larger surface of the intestine, (to which, if they long adhere, or are applied by repeated arrestments from the intestinal valves and folds) they excite a phlegmon or inflammation in the points of contact. For thus we all know the resin of jalap-root extracted, when it softens with heat, sticks very firmly to every thing it touches, and at the same time contains in itself so strong an acrimony as is often observed in practice to excite the most troublesome pains of the abdomen, with over-purgings of dangerous consequence; unless those effects are guarded against by a long continued levigation of it with sugar, or by reducing its cohesive tenacity by grinding with the yolk of an egg. The like mischiefs to the bowels, have been also known from the use of colocynthida, and other acrid purgatives. But much more will the worst of these mischiefs follow from arsenic, or other acrid poisons; upon which you may peruse the often commended treatise of *Wepfer, de cicuta aquatica*.

Also from morbid matter, acrimonious, putrid, &c.] When we treated upon a febrile diarrhæa (at §. 719.) it appeared, that the matter of the disease might be transferred from various parts of the body,

to

to the intestines, so as to be from them evacuated in stools; and in the same place we also remarked the great diversity of matter this way expelled. Even the cholera morbus (sometimes called the yellow-fever) shews us how suddenly all the humours of the body may be transfused with great violence through the intestines, so as to exhaust all the powers of the strongest persons in a few hours, and cause them to perish, convulsed within a few hours by mere inanition of the vessels; because the blood, fused or dissolved with a force seemingly poisonous, is expelled thro' the meseraical vessels of the stomach and intestines: for when these patients are upon the point of recovery, after so little a time, they appear weak, pallid and wholly exhausted. If therefore a quantity of a corrupt liquid, either purulent, ichorous, or the like, be lodged in some part of the body, and is from thence translated to the intestines, it may easily corrode and inflame them by its acrimony. And for this reason inflammations, ulcerations, and putrefactions of the bowels are reckoned up among the effects of atrabilis flowing to them (§. 1104.); and that the same effects follow from the worst kind of the scurvy is remarked at §. 1151, No. 4. as we shall hereafter more plainly shew.

Violent cramp or convulsion foregoing, &c.] We know well from physiology, that the intestines have a surprising worm-like motion, called peristaltic or contractive, by which their contents are urged forwards, and against their membranous sides, by which all the emulsion or more fluid and milky parts are successively taken in by the mouths of the lacteal and meseraical veins, till at length the gross and juiceless fæces are alone sent forward to be excluded the body by the rectum. It also appears, that this vermicular motion, is made by muscular threads spread around the intestine, which continue to operate even a long time after a patient is dead, and may then be again excited into action, when the motion has spontaneously

ously ceased, by irritating the bowel with heat, puncture, or other stimulus, upon which see the comment to §. 648 ; where divers experiments were related to shew, that several substances applied to the intestines, excited cramps in these muscular fibres, by which the gut becomes violently constricted, not only in the place of contact with the acrid substance, but also in divers other parts at the same time, so as to arrest or refuse any passage to their advancing contents. This may be seen fairly confirmed to the eye by experiments, made upon a living frog by *Peyerus*^d.

Therefore acrimonious substances taken into the stomach, or transferred to the intestines from more distant parts of the body, may excite such a convulsion of the gut, and by that means produce an inflammation of the bowels.

But sometimes the like cramps are occasioned in the bowels by very different causes, not reducible to any kind of acrimony that we know of. For thus the latent matter, which being deposited upon the extremities, occasions the gout with most exquisite fits of pain, if the said deposition of it on the usual parts be impeded thro' weakness of body, or an imprudent management, it will frequently excite the most dreadful cramps in the viscera of the belly, (upon which see §. 1273.) ; and from the same cause the bowels are often so cramped or constricted, that in the contracted parts all vital influx and reflux of the blood and spirits are intercepted, of which a fatal gangrene is suddenly the consequence. 'Tis true indeed, that some kind of acrimony may here be culpable, in the matter of the gout, since it even by repeated fits will convert the ligaments, tendons and membranes into a chalkey substance. But in weak or nervous, hysterical and hypochondriacal habits, the like convulsive cramps of the viscera will arise merely from a disturbed motion of the spirits ; in the same manner as they are commonly known to arise in

^d Parerg. Anatom. Exercit. 1. Cap. ix. pag. 47.

in other parts of the body. *Sydenham*^e, who has wisely cautioned against the variable face, under which this complaint hides itself, so as often to deceive the less skilful practitioners; has also observed, that it will sometimes produce symptoms nearly resembling the iliac passion. 'Tis true indeed, that he has confused the periodical jaundice arising from stones of the gall-bladder with these convulsive pains, which spring from a mere nervous or simple spasm without any such obdurate cause; but then he expressly intimates, that those severe pains, which follow from hysterical and hypochondriacal complaints, have no consequent jaundice attending them, but are easily carried off by nervous and antihysterical medicines. There are many tender persons, who by long standing upon a cold stone pavement, have immediately been troubled with severe gripes of the belly, as we remarked before upon another occasion (at §. 650. No. 3.); where there are also more particulars given, that teach us such convulsions of the bowels may be often excited, and again removed, or cured by the application of causes and remedies to other distant parts of the body.

S E C T. DCCCCCLX.

AN inflammation once formed in the bowels, produces a constriction of the intestine, shuts up its cavity, and intercepts the passage of the advancing contents, propelled from above; thereupon the parts of the intestinal tube that are above the seat of the obstruction, and even the stomach itself, become greatly inflated, extended, over-strained, or dilacerated, and inflamed; and by this means it creates a most acute, ardent, and fixed pain,

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with

^e In Dissertatione Epistolari ad Gulielmum Cole pag. 488. & Sect. IV. Cap. vii. pag. 267.

with a swelling round all the inflamed parts; but here, if the malady be irritated by forcing remedies, it occasions violent convulsions of the diaphragm, and abdominal muscles, wholly intercepts the stools, and excites a rejection by vomit of every thing taken, whether alimentary or forcing, sooner or later, within a short time after they were swallowed, according as the obstruction is seated higher up or lower down in the gut; from whence spring painful flatulencies or belchings, most severe gripes, with a murmuring noise of the bowels, an iliac passion or rejection of the intestinal contents, a volvulus or involution of one part of the gut within the other; whence an abscess, gangrene, schirrhus, or cancer; a most sharp fever, and extreme weakness from the violent pains, which next close by a speedy death.

The human intestines are very differently disposed in the living body, from what they often appear to us in the dead subject; for in the last case they oftener appear distended with flatus, so as to exhibit a very ample cavity to the eye. But wounds of the abdomen, and dissections of living animals, have taught us, that the small intestines more especially, are in their healthy vital state considerably thick, or fleshy, and solid, in their substance, including but a small cavity, which is still further diminished by their projecting valves of pleats, and the internal or villous lining, composed by the evanescent ends of the vessels, by both which a too quick passage of the nourishments is checked and retarded. We see that some persons will drink several quarts of Spaw-waters in the space of an hour or two, and yet not a drop of them runs off by stools; which plainly enough proves the bore or light of the intestines to be naturally

naturally of but a small diameter: and therefore if an inflammatory swelling arises in any part of the gut, it will not be wonderful if it entirely shuts up the light of it, so as to quite intercept the passage of its contents; and the more so, as the acute pain, which is inseparable from an inflammation of the bowels, obliges the painful part of the gut to contract with a convulsive cramp or stricture, as we declared more at large under the aphorism preceding. *Ruyfch*^f found the cause of this malady in several opened bodies to be such a close stricture of the gut as allowed nothing to pass through it. Nor will this seem so wonderful, if we consider, that the ample cavities of the nostrils are sometimes so closed, or filled by a slight inflammation and swelling of the mucous membrane in a cold, that the patient can draw no air through them to supply the breathing.

Such an obstacle, therefore, being formed, as wholly stops up the light or bore of the gut, will occasion all that is swallowed into the body to be collected above the part diseased; and the air itself being unable to gain an exit, will rarify and distend the part of the intestines that lies betwixt the stomach and the part inflamed; and will even inflate the stomach itself, until it gains a discharge in belchings: but the cause of the malady still continuing, there will be continual returns of the said flatulent complaints, as we before explained more at large, when we treated professedly upon flatus and belchings. Sometimes this stricture or stoppage is seated in several parts of the intestine at the same time, as appears from the opening of bodies deceased of this malady; and in that case the swallowed air intercepted betwixt the two constricted parts, or the air that is generated by fermentation and putrefaction of the intestinal contents, being further rarified by the heat of the body, may cause a dreadful distention or tumefaction of the intestinal tube, with the most ex-

cruciating pains; and from this distraction a new and more ample inflammation and pain will arise, and instead of confining itself to one or two places, will be spread largely throughout the abdomen. *Ruyſch*^s observed in the body of a girl killed by these pains, that the lower part of the colon which begins to take the name of rectum, was distended into such an enormous bulk as concealed all the other viscera of the abdomen. But 'tis evident enough what enormous pains must arise from so great a distraction in membranous parts, that have so sharp a sense. More of the like examples of enormous swellings in the intestines may be seen in *Bonetus*^b.

But when the ingested aliments or medicines, are by the peristaltic motion forced with some stress upon the inflamed parts, the pain is then very greatly increased. And, therefore, although the pain remains fixed in this malady, yet it is more violently increased at intervals, as *Sydenham*ⁱ has well remarked, when he tells us, *subinde remittitur dolor, mox recrudescit paroxysmus, quem aeger praesentens, vultu miserabili atque ejulatu, ceu praesentem exhorret & averſatur*. “ That the pain sometimes is abated, “ and soon after a fit of it returns again; the approach of which being foreseen by the patient, “ obliges him to shew, by his miserable countenance and complaints, the same abhorrence and “ aversion as if the fit was present.” This is a circumstance that I have often likewise observed in these patients myself, and seems to arise from the aliments, drinks, or flatus, propelled as far as the inflamed parts: for when we examine this peristaltic or vermicular motion in living animals dissected, so called because like worms (which go forward by a successive approximation and removal of the ringlets that compose their bodies) the orbicular fibres of the intestines, contract successively in order one after the other,

^s Ibidem Observ. 92. pag. 86.
Tom. II. pag. 214.

^b Lib. III. Sect. XIV.

ⁱ Sect. IV. Cap. VII. pag. 259.

other, so as to drive forward the contents along the tube of the intestine; but in such a manner, that after the contents have gone thro' some part of the gut, they are in some measure repelled back again, by the like vermicular motion reverted, or turned retrograde for some length of the gut, only the progressive motion always exceeds that which is retrograde; and this worm-like creeping or working of the fibres is continued thro' the whole tract of the intestines, in such alterations, that all the fluid parts may be drunk up from the intestinal contents, by the villous extremities of the absorbing vessels. Therefore, when the intestinal contents are thus driven on to the inflamed part, the pain will be augmented; but while they are carried back again, the pain will be lessened. Moreover, we see, that in living animals the motion of the guts, which we call vermicular, will sometimes be still for several minutes, and will then again be renewed; from all which one may be able to understand the present appearance in this malady.

But that convulsions of the diaphragm and abdominal muscles may arise from such an irritation, and that sickness with vomitings may spring from thence, appears evidently from what we before delivered concerning the same subject at § 642, and §. 656: and it was declared at §. 656, that from a stubborn vomiting, an iliac passion might arise. But what is taken into the body, is again rejected sooner or later, according as the inflammation is seated nearer to or farther from the stomach; upon which particular we also treated at §. 656.

Painful flatulencies, and murmurings of the bowels with most severe gripes.] Under the foregoing aphorism it was observed, that certain experiments demonstrate, an irritation being made in one part of the intestine, occasions not only a constriction in that place, but also in many other parts of the gut adjacent: but from hence the painful flatulencies are in-

tercepted, and the cramps being afterwards removed, the confined air gets liberty to wander more freely thro' the intestines with borborygmi or murmurings, until it is again intercepted or locked up, upon which the cramps and pains return. But since an inflammation formed in one part of the intestine usually spreads itself larger as this malady continues longer; it may thence readily appear what violent pains must arise while the inflamed parts are overstrained by the flatus. *Aretæus*^k has remarked these symptoms in the present malady, namely, wandering pains, with empty belchings that give no relief, and a murmuring of the bowels with wind, that will descend even to the anus, and yet not discharge itself. From hence appears the reason why *Sydenham*^l observes, that in the beginning of the distemper the pain does not so certainly determine itself to any one point of the belly, while the cramp holds several distinct parts of the intestine with such a constriction: but when the whole violence of the malady urges upon one part, the pain is then fixed as it were in a point, and often becomes most excruciating, without making abatements, till a gangrene being at length formed, suddenly removes all sense of pain. At the same time also the reason is evident why there is a constipation of the bowels, or a total suppression of the stools, denying a passage to every thing.

Iliac passion, or volvulus, &c.] When an inflammation of the intestine wholly intercepts its light or passage, the malady is then called *ileus morbus*; for thus *Galen*^m has defined it; *Ileus est phlegmon intestinorum, ita ut nec flatus nec stercora exeant, tormina sequuntur vehementia & cruciatus intolerabiles*. “The
 “ileus is a phlegmon of the intestines, to such a
 “degree that neither flatus or fæces can pass out
 “through them; in consequence of which follow
 “most violent gripings and pains intolerably ex-
 “cruciating.”

^k De causis & signis morbor. acut. Lib. II. Cap. vi. pag. 18.

^l Sect. IV. Cap. vii. pag. 259.

^m Defin. Med. No. 273.

“cruciating.” Whence in another place, he saysⁿ, it is a peculiar property essential to this malady to allow no discharge downward; but as for the vomiting, it attends not always, but only in the more urgent cases. The like is also pronounced by *Hippocrates*^o concerning this distemper, whose words are, *Resiccatur enim simul intestinum, & constipatur ex inflammatione, ita ut neque flatus neque alimenta pertranseant, sed venter durus sit, & vomat interdum.* “For the intestine is here dried by an inflammation, and at the same time so constricted or bound up, that neither wind nor aliments can pass through; but the belly becomes hard or tight, and the patient has sometimes a vomiting.” Therefore the term *ileus* is best derived (ἀπὸ τῆς ἐλκεῖν) from the word to constrict, strengthen or bind-up together, in a small compass; but when the same word is written with an aspiration εἰλέειν, it then rather signifies a contortion, a twisting or winding into a knot, or a thrusting of one part into another. And thus the present malady is, from the revolutions of the flatus through the windings of the upper intestine, by *Aretæus*^p called εἰλεὸν; and from thence the commonly received term of *volvulus* seem to have been also derived. *Celsus*^q however calls it barely the disease of the small intestine, under the Greek term εἰλεὸν, written without an aspiration, and without explaining it by any Latin name: but treating in the next chapter of the disease in the larger intestine, he says^r, the gut seems to be turned or twisted, which comes nearer the term that is written with an aspiration. Possibly it may be also called *volvulus*, because *Cælius Aurelianus*^s says, these patients “perceive their intestines to be twisted [*convolvi*] or convoluted”: or because from the violence of their pains these patients

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ⁿ Comment. in Aphor. 10. Sect. VII. Charter. Tom. IX. pag. 296. ^o De morbis Lib. III. Cap. xiii. Charter Tom. VII. pag. 588. ^p De causis & signis morbor. acut. Lib. II. Cap. vi. pag. 18. ^q Lib. IV. Cap. xiii. pag. 221. ^r Ibidem pag. 223. ^s Acutor. morbor. Lib. III. Cap. xvi. pag. 235.

tients bend and wind their bodies over the affected parts of the belly. For thus we see, that these miserable patients endeavour to relieve their pains by bending the body forwards, and turning it round from one side to the other. Afterwards the name *volvulus* seems to have been established and retained from the popular belief that the gut became so twisted or complicated by the cramp, as to deny all passage, by streightening or shutting up the bore or light; or rather when the cramped part of the gut entered into the more ample dilated portion, which many have better distinguished by the title of an intorsusception of the gut. For it is hardly conceivable how the intestine connected to the mesentery can be so twisted or contorted as wholly to shut up its cavity. This indeed may happen, if the connexion to the mesentery be first dissolved by a putrefaction, as *Ruyfch*^t assures us he has twice observed; but in such a case, the patient must be upon the point of death from a gangrene of the mesentery, before such a twisting can happen, since injuries of that part are so extremely dangerous, as we have shewn before at §. 170. No. 3. But such intorsusceptions of the gut are often found in deceased bodies, where the cramped or constringed portion of the intestine, being narrow has for a considerable length entered into the contiguous more relaxed portion, so as to intercept the free passage through the tube of the intestines. This is what *Ruyfch*^u has twice demonstrated in public. In the body of a girl, who died of convulsions, *Willis*^w observed the small intestines, thus involuted one within the other in several places; *Partis unius superficies convexa, in alterius concavam, tanquam in vaginam fuerit intrusa & alte recondita*, “so
“ that the convex surface of one part, entered the con-
“ cavity of the other, as if it had been for a long way
“ lodged or thrust into a sheath.” It is therefore
without

^t Observat. Anat. Chirurg. 91. pag. 84.

^u Ibidem pag. 85.

^w Patholog. Cerebri Cap. viii. pag. 107.

without reason, that *Helmont* * pronounces an involution of the gut impossible; because in a very rich citizen of Antwerp (who had dispatched couriers to all parts with a promise of eighty thousand pounds reward for his cure in this malady; but expired within the week) he had found after death, that instead of any involution, it was a collection of indurated fæces in the ilium or small gut, about 16 inches from its opening into the cæcum. 'Tis true, no body can deny, but this malady may arise from a stoppage of the intestines with impervious matters; but it would be rash to conclude thence, that it is the intire and only cause. 'Tis true, that considering the wonderful connexion of the guts with the mesentery, together with their smoothness and lubricity, it would seem to be a difficulty for such a mutual introsusception of the gut to take place: for we see in dead bodies is is no easy matter, to cause one part of the gut to enter thus within the other, and if it be once so affected, it soon comes out again of its own accord. In the bowels of living animals it has been in vain attempted to imitate the malady we call an introsusception of the gut †. And yet ocular demonstration has convinced us, that this oftener happens than one would commonly believe, as Dr *Velfe* has fairly proved by many valuable observations in his Thesis upon the subject; but it more frequently happens in those of tender years, as that learned author observes, and as I have myself several times seen. He makes a distinction of the volvulus into perfect and imperfect. By the perfect he understands a portion of the intestine, with its annexed mesentery, urged by disease in the next more dilated portion of the same gut: but the imperfect is said to be when the loose part of the gut opposite to the mesentery enters thus, while its annexed side still remains in the same direction with its conjoined mesentery. That the contracted

* De flatibus §. 30 & seq. pag. 339. † Videatur de his
Cornel. Henr. Velfe Differt. Inaugural. de mutuo intestinor. ingressu &c. Lugd. Batav. 1742. pag. 2, 3, &c.

contracted part of the intestine may thus enter the more dilated portion to a considerable extent, is shewn by *Peyerus*^z, who found the part intromitted equal to four fingers breadth. Nor is it always observed, that the upper part of the gut enters thus into the lower, since the reverse has been remarked; but then the mesentery always enters with the gut in a perfect volvulus, and so streightens or corks up the tube, that an evolution or return of the gut becomes very difficult. But *Peyerus*^a very plainly saw, that a volvulus would thus form itself in the guts of a frog, irritated to their motion, by which some of the more ample parts would receive into them others next continuous, and confine them some time by intromission, until the longitudinal fibres stretched them out, or withdrew the arrested parts from their strict lodgments. This is a fair experiment for explaining both the production and cause of gripings and of the volvulus: for it seems highly credible, that this cramp-like contraction of the gut; and intrusion of it, together with the annexed mesentery, into the adjacent more ample portion could not happen but with considerable pains; which pains must go off again, when the gut recovered its former rectitude of place, until a like cramp and inversion of it returned. And this acquaints us with the reason of another circumstance, namely, why in the beginning of this malady the severe pains often afflict but by short intervals: but when the intromitted portion is of such an extent, or is so strongly arrested by the inflammation and swelling of it, that an evolution can be no longer practicable by the long fibres, the pain then remains fixed, ardent, and confined always to one and the same place. This is what *Sydenham*^b has very well observed in treating upon the present malady; for his words are, *Sub initio hujus morbi non ita certo ad unum aliquod punctum deter-*

^z Parerg. Anatom. Exercit. I. Cap. ix. pag. 46.
pag. 47.

^b Sect. IV. Cap. vii. pag. 259.

^a Ibidem.

determinatur dolor, atque in ejusdem progressu, neque alvus ita pertinaciter cathartorum vim eludit; quo autem magis augetur dolor, eo obstinatius in puncto figitur, vomitio succedit frequentior, & major alvi adstrictio.

“ For in the beginning of this malady the pain is
 “ not so certainly confined to one particular point,
 “ nor in its progress do the bowels so obstinately re-
 “ sist the power of cathartics; but the more the pain
 “ is increased, the more obstinately does it fix in
 “ one point, the vomiting ensues so much oftener,
 “ and the bowels are so much more constipated or
 “ bound up.” But he observes, that as the vio-
 lence of this malady advances, the peristaltic mo-
 tion of the intestines becomes at length wholly in-
 verted, and all the purgatives given to procure a
 passage are immediately rejected again, as if they
 were vomits; and that even clysters and supposito-
 ries, conveyed into the bowels by the anus, were
 often, by the said retrograde motion, carried up
 through the whole tract of the alimentary tube, and
 rejected by vomit *. Such excrementitious, or fæ-
 cal vomitings, were also observed in this malady
 by the ancients^c, who have condemned them as a fatal
 sign. Some of celebrated character have indeed de-
 nied that there can be any such retrograde, or reverted
 motion of the bowels, supposing the convulsive ac-
 tion, or pressure of the diaphragm, and abdominal
 muscles, exerted in vomiting, to be sufficient for
 urging the contents of the bowels up into the sto-
 mach, as they are in this case so much filled all the
 way betwixt the stomach and the obstacle: and for
 the putrid or excrementitious smell of what is rejected,
 they have supposed it to arise from the long stay of
 those contents in the stomach and small intestines. But
 the dung or excrement, properly so called, is natu-
 rally

* Diemerbroek Anatom. Lib. I. Cap. viii. pag. 36. ^c Hip-
 poc. de victus ratione sanorum Lib. III. Cap. vii. Charter. Tom.
 VI. pag. 487. Galen. de locis affectis Lib. VI. Cap. ii. Charter.
 Tom. VII. pag. 509. Aeginet. Lib. III. Cap. xliv. pag. 45.
 versa.

rally to be found only in the large intestines, and never in the small intestines but by disease or violence, and even then exceeding rarely. I have visited chronical maladies of this kind, in which, the passage being stopped up by a schirrhous, the patients have hardly ever once gone to stool; but after four, five, or even eight days, the greatest anguish has invaded and brought on a vomiting, that rejected every thing which was swallowed into the body during that whole time; and yet there has not been any dung-like, or excrementitious smell in any part that was brought up. After such a removal of the oppressing load, these patients have found themselves tolerably well, have had a craving appetite for nourishments, and have found themselves recruited by what refectations were given them, until after a like interval of time elapsed, their vomiting has returned as at first: and thus I have known the distemper supported for several years. Nor is there any objection to this, deducible from the experiments that have been made on living animals by tying up the small intestines with a ligature^d; since, in such an unparalleled case, there could be no opportunity for any thing to be rejected which was intercepted betwixt the ligature and anus, within the tube of the intestine: nor can such experiments suffice to explain how clysters injected should be returned by the mouth with a vomiting, which we have known to be truly a matter of fact in the iliac passion; for this is what has been plainly seen by myself, and is also confirmed by the observations of other writers of the greatest probity. It will perhaps seem difficult to understand how the contents of the large intestines can be able to pass into the small one of the ileum; and likewise to judge how they should get over the obstacle or seat of the volvulus: but if it be considered that by this retrograde peristaltic motion, the ileum itself is emptied while the cæcum is greatly urged and laterally distended,

^d Acad. des Sciences l'année 1713. Mem. 470.

distended, such a passage may seem possible; and if the volvulus be formed by an intussusception of a lower portion of the gut into the upper, the way will not be so wholly intercepted for any thing to pass upwards by the reverted motion. But if the gut be in this manner involuted downwards, so that the lower portion being more dilated takes in the upper, such a return will then be much more difficult: but then we are also to remark, this vomiting of the fetid dung, happens only (for the most part) when the patient is got into the last extremity of the complaint, namely, when a gangrene is already present, or upon the brink of approaching: but 'tis well known, that however tight or strained the parts may be, under a state of painful inflammation, they notwithstanding relax and subside when the phlegmon changes to a gangrene. And therefore it is that *Hippocrates* and *Galen* have, in places before-cited from them, pronounced that a patient seldom or never recovers in the iliac passion, when it is attended with a vomiting of their dung.

An abscess, gangrene, &c.] That all the effects of inflammation may here follow is self apparent; but the most acute fever which attends upon a phlegmon of the bowels, if it be not immediately relieved by art, soon produces a fatal gangrene; as all the vital influx, and reflux of the circulating humours, is suddenly destroyed by the cramp-like constriction, and intense inflammation. But again, as *Aretæus*^e observes, the most severe pain which in this malady makes death seem very comfortable to the patient, (see §. 226.) does greatly increase the fever, and hasten the gangrene.

From hence it is that in another place he plainly intimates, that many die suddenly by mere excess of violence in the pain^f; while in others the intestine either suppurates, or turns black with a gangrene, and

^e De curatione morborum acutor. Lib. II. Cap. v. pag. 105.
^f De causis & signis morbor. acutor. Lib. II. Cap. vi. pag. 18.

and breaking off by the putrefaction kills the patient. So that he seems to have recounted only the symptoms of the middle, or more moderate kind of volvulus, supposing that in the most violent kind of the malady, nothing more than excessive pains could be observed by the physician, betwixt the invasion, and the speedily approaching death of the patient. The powers even of the strongest persons are immediately sunk in the present malady; whence it is that *Aræteus* reckons such an (ἐκλυσιν) *eclipse*, or extinction of the bodily powers, among the symptoms of a moderate volvulus. But it was before said, at §. 661, where we treated of febrile weakness, that offensive humours, or poisonous matters, lodged in the first passages, occasion a very sudden weakness of all the powers; and we see that in persons a little before perfectly in health, an inflammation of the intestine from an incarcerated rupture will cause speedily a sinking of all the powers. Whence it seems, that these very nervous parts of the body being injured, have the property of immediately changing those parts of the body which afford the constant springs of all the animal, and vital powers, in their natural degree of strength or integrity. It would perhaps be difficult to explain this, *a priori*, from the corporeal causes; but it may suffice the purposes of a physician, if he knows the simple truths that are necessary, as they stand remarked by faithful observations.

From hence we understand why sometimes, altho' rarely, a volvulus is to be observed in infants that die suddenly convulsed, without any signs of a formed inflammation or gangrene^s; for in these death follows immediately from the convulsions, excited by the extreme pain and irritation of the intestine from its acrid contents, before those effects can take place. But in adult bodies deceased of this malady.

^s Vide Cornel. Henri. Velse dissertat. ante citatam.

as far as I have been able to learn, there was always found an inflammation, or at least such effects as follow immediately from inflammation as the cause.

S E C T. DCCCCCLXI.

AS long as this malady continues in its inflammatory stage, it often imposes upon those who are incautious under the name of a colicky pain, by whom it is, with the most dangerous events, ascribed to cold, to wind, or to flatulencies, and accordingly ill-treated by carminative and hot medicines, with the most fatal consequences.

As the most troublesome pains of the abdomen often arise without any previous inflammation, more especially in those who have very weak or irritable nerves; and in such often from the slightest causes, such as a cold in the feet, &c. and as such pains are often very quickly removed or quieted by an expulsion of the flatulencies, thereupon immediately almost every person is for applying to the use of such warm medicines as are termed carminatives, or expellers of wind, all of which possess a very considerable acrimony or heating force. We see likewise that the ancient physicians administered the same sort of warm medicines, which they termed (*κόλικά*) *colical*, for the discussion of flatulencies. For *Celsus*^h recommends to us such a remedy as the invention of *Cassius*, and which contains the sharpest spices, such as long and round pepper, costus, &c. But this he very judiciously advises for an overcharging of the bowels, from whence the pain, he says, *In plerisque post frigora cruditatesque oritur, deinde quiescit; & per ætatem sæpe repetens sic cruciat, ut vitæ spatium nihil demat;* “ in most cases arises
“ after

^h Lib. IV. Cap. xiv. pag. 223, 224.

“ after colds and crudities, and then lies quiet at
 “ intervals; so that by frequent returns it long tor-
 “ ments the patient, but without any curtailment or
 “ shortening of his life.” From which account it
 plainly appears, that this was no inflammatory malady.
 And in the same manner *Aretæus*ⁱ, for an *ileus* that
 arises, *absque inflammatione ob corruptionem, aut vali-*
dum frigus, “ without inflammation, from a cor-
 “ ruption of the aliments, or from violent cold,”
 advises to omit blood-letting, and use cummin and
 rue for an expulsion of the flatus; but at the same
 time orders emollient and oily medicines both exter-
 nally and internally. Moreover, the ancient phyfi-
 cians, when they used the like spicy remedies, in-
 fused them in a large proportion of water, which
 renders them very easily supportable, and less mis-
 chievous: but at present the shops luxuriantly abound
 with simple and compound aromatic spirits, prepar-
 ed from an inflammable or vinous spirit, and highly
 praised or reputed by the vulgar for the expulsion
 of flatulencies: whence it is a rarity for a physician
 to be called in these painful complaints before they
 have been well dosed with the like liquors: but it
 must be very apparent to every one, how much the
 malady must become increased, when a phlegmon
 seated in the bowels is irritated by such ardent and
 spirituous liquors. I have thus seen an iliac pain or
 passion fatal in eight hours time, after drinking six
 ounces of spirituous water distilled from lovage seeds.
 And many there are who perish from the same cause,
 who might probably have been otherwise recovered.
 Even where the pain of the belly arises only from a
 cramp of the gut, without any inflammation, it is
 very unadvisable to make use of the like heating
 spirits, since they are always in danger of doing great
 mischiefs, if they prove not directly sufficient to
 remove the pain. For though the malady arises here
 not from any original inflammation, yet the convul-
 five

ⁱ Du curat. morbor. acutor. Lib. II. Cap. v. pag. 1056

five cramp of the intestine, that gives birth to the flatulent distention, may thus easily excite a consequent phlegmon, as we made to appear before at §. 959. At least it will be much safer here to use only those remedies that have a more gentle spicyness; such as the four greater and lesser warm seeds of the shops, infused in a due proportion of water; for then they are hardly ever able to do any mischief: but if from the symptoms or signs, we perceive an inflammation to be present, the use even of these must be rejected.

S E C T. DCCCCCLXII.

BUT this painful malady is very easily known, as a true inflammation, from the acute continual fever that attends it; from the severe thirst, great heat, hard pulse, and burning pain; together with a flame-coloured urine and sudden weakness of the powers.

A due attendance must therefore be given to the signs which point out a true inflammation in the present malady; and these are so very apparent, that no expert physician can possibly be mistaken. When the iliac pain or passion springs from an original inflammation of the bowels, it is usually preceded by a fever; which raging but for a few hours, at length terminates in the present malady, as *Sydenham*^k hath very well remarked: and the like is also observed in respect to a pleurisy, quinsy, and other inflammatory distempers; namely, a fever goes some time before, and then follows a phlegmon in this or that part of the body. But when a cramp or convulsion of the gut produces an inflammation without a fever

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A a

having

^k Sect. IV. Cap. vii. pag. 259.

having preceded, in that case the fever comes after the phlegmon. At the same time likewise attend all the symptoms that usually accompany an acute fever and an inflammation, namely, heat, thirst, &c. But concerning the extreme weakness in this malady, we have already treated at §. 960. But all these are the symptoms which attend the malady beginning or advancing, and which suddenly change almost to the contrary, when the distemper turns suddenly to be fatal; for then the great heat is succeeded by a coldness, the pain ceases, the pulse that was before hard and strong, is now weak and intermitting, but extremely quick, as *Aretæus*¹ hath very well remarked. Sometimes too there is such a violent constriction of the anus, that even clysters cannot be injected; which is also a symptom remarked both by *Aretæus*^m and by *Hippocrates*ⁿ. From hence too we may be able to understand another passage in the last great author^o, whose words are, *At si, remisso volvulo, febris illum prehenderit, desperatus est, fortassis enim etiam soluta alvus inferior interficiet.* “ But if the
 “ volvulus or iliac passion being remitted, a fever
 “ shall invade the patient, his malady is fatal; and
 “ possibly it may be so likewise, altho’ a purging
 “ or relaxation of the lower bowels may ensue.” For if the volvulus shall have continued from a violent cramp for a considerable time, it occasions an inflammation that is soon joined with a fever, and that very shortly is followed with a gangrene; thereupon the pain suddenly remits, or else goes entirely off, and the gangrenous part of the gut no longer makes any resistance to the urging contents, which therefore run off in a flux or purging, while the patient expires, not of the purging, but of the mortification

¹ De causis & signis morbor. acutor. Lib II. Cap vi. pag. 18.

^m Ibidem. ⁿ De Affectionibus, Cap. vi. Charter. Tom. VII. pag. 626.

^o Hippocrat. de Morbis, Lib. III. Cap. xiiii. Charter. Tom. VII. pag. 588.

Sect. 963. of the BOWELS. 355
tification in the bowels, as we shall shew hereafter at
§. 969.

S E C T. DCCCCCLXIII.

IF the same painful malady (§. 959.) shall take up its seat within the inflected colon, it forms the distemper called a colic; but if it invades the extreme parts of the intestinum rectum, 'tis not unusual to mistake it for the blind piles: yet a dysentery that is moderate, somewhat bloody, or bilious, carries it off.

Altho' practical observations inform us, that a phlegmon, and volvulus, or iliac passion, does the most frequently take place within the small intestines, yet we are assured that the same malady may be also lodged throughout the whole tract of the large intestines; into the belief of which we are persuaded by the similitude of their fabric, and in the truth of which we are equally confirmed by convincing observations. *Ruysh*^p found a volvulus in the large intestine, which we call the colon; and in the body of a child who died of a most severe iliac passion, *Hildanus*^q found the gut cæcum was contracted, and had insinuated itself into the ileum, whereby this last gut was so stopped, that nothing could pass out from the small intestines into the colon. He laid open the ileum to come at and take out the cæcum, which appeared inflamed and swelled on all sides; and in the bottom of the cæcum appeared an ulcerated schirrhus. Even he affirms he had inspected many bodies deceased of this malady, and always found the origin and cause of the distemper to be seated about the gut cæcum: and therefore he was induced to believe that the valve ascribed

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bed

^p Adversar. Decad. 3. pag. 17.
Cent. I. No. 61. pag. 49.

^q Observat. Chirurg.

bed to *Baubine*, became so contracted from the inflammation of the cæcum, as to allow nothing to pass from the ileum into the colon, from whence the malady spread itself into the distracted ileum, and infested all the surrounding parts with a gangrene and mortification. But by what was said before, it appears plainly enough, that the seat of this malady has been also found in other places of the intestines; and therefore *Hildanus* seems to have been over-hasty in assigning the perpetual seat of this incipient malady, since even he confesses that the opened bodies who died of this distemper, smelt so intolerably, that he could hardly examine all particulars with exactness. In the body of a man who had long been afflicted with colicky pains that lay chiefly in the lower part of the abdomen, the gut cæcum was found fallen into the pelvis, where it very firmly cohered with the upper part of the intestinum rectum: from the place of cohesion upward, the large intestine of the colon went reflected, so as to make an acute angle with the rectum, and stretched itself (from the liver) in the usual manner under the bottom of the stomach, and from thence in its common direction terminated in the rectum. But here the cæcum and rectum, with the parts adjacent, were found gangrenous in the place of their cohesion, and an ulcer was found in the said cohesion, betwixt the cæcum and rectum, large enough to admit easily one's middle finger^r. The most certain observations therefore evince, that the same distemper may be also seated in the large intestines; whence it may seem strange that *Hippocrates* should say so little upon colicky distempers, who seems to have included these maladies altogether under the description and general title of the ileum. Yet these are very well distinguished by *Aretæus*^s, who judiciously

^r Philosophical Transactions, No. 422 pag. 236. Abridgem. Tom. VII pag. 517. ^s De causis & signis mormor. acutor. Lib. II. Cap. vi. pag. 19.

ously observes, that various parts of the body are often accused, upon which the colon is lodged in its course, and answering to the different part of that intestine in which the malady is seated. His words are, *Dolor modo ad costas usque ascendit, quando & speciem pleuritidis prae se fert (si quidem & isti febricitant) modo sub spurias costas huc & illuc, ita ut jecur aut lien dolere videantur. Item & ilia quandoque dolent: colon enim prae grande, & quoquoque circumvolutiones faciens:* “ The pain sometimes rises
 “ up as high as the ribs, so as to take upon it, at
 “ times, the resemblance of a pleurisy (whenever
 “ these patients have also a fever); but sometimes
 “ again the pain lies within the false ribs, either of
 “ one side or the other, so as to afford the resemblance of a pain in the liver or spleen. Sometimes again the flanks, or sides of the abdomen,
 “ are the seat of the pain; since the colon is very
 “ large, and extends its circumvolutions on every
 “ side.” Moreover, he remarks those symptoms which invade such patients as have this inflammation seated in the lower part of the colon where it joins the rectum; for he says, *Quidam sunt etiam, quibus & in sacro osse dolor inhaerescit, & in femoribus, & in testium cremasteribus:* “ There are some also who
 “ have the pain seated upon the os sacrum, extending thence into the thighs and cremaster muscles
 “ of the testicles.” Now although an inflammation of the rectum may likewise be readily granted to affect the neck of the bladder and adjacent seminal vesicles, yet the pain of the thighs and testicles here seems to be rather signs of a nephritical complaint, as we shall shew hereafter at §. 993. However, *Galen*^t observes to us, that a violent pain of the colon is by physicians sometimes referred to maladies of the kidneys; and on the reverse, that pains of the kidneys are sometimes ascribed to the colon.

A a 3

then

^t De locis affectis Lib. VI. Cap. 11. Charter. Tom. VII. pag. 508.

then he confesses this mistake can do no great damage to the patient; and adds, *Igitur ab initio horum affectuum distinctio difficilis est, quo tempore neque magnam praesidiorum differentiam ipsi requirunt*: “Therefore in the beginning of these complaints, the distinction is difficult betwixt them; but neither do they at that time require any great difference in their curative treatment.” And again, *Quapropter in curatione nullum augurandum est damnum nobis evenire, quod in primo horum morborum insultu difficulter illos discernamus; tunc enim neque externis, neque internis, differentibus egent auxiliis, sed sufficiunt ea solum, quae dolorem leniant*: “But because in the first attacks of these maladies, it is difficult for us to distinguish betwixt them, it does not therefore follow that we are to presage any mischiefs from thence; for they then require no difference in the remedies either external or internal, but those alone suffice, which in both cases relieve pain.” Which be the signs that are distinguished betwixt a nephritis and a colicky pain, will be hereafter declared, when we come to treat professedly upon nephritical complaints.

Another thing to be observed in respect to a phlegmon of the large intestines, is that they allow the malady to be more easily cured; whence *Aretæus*^u pronounces, *In hoc malo periculum tanto levius est, quanto colon tenuibus intestinis carnosius, crassius, & noxae tolerantius est*: “That in this complaint the danger is less in proportion as the colon is more fleshy, thick, and longer able to sustain the phlegmon than the small intestines.” And *Celsus*^w appears of the same opinion, since he tells us, *Intra ipsa vero intestina consistunt duo morbi: quorum unus in tenuiore, alter in pleniore est. Prior acutus est: insequens esse longus potest*: “But there are two painful maladies that invade the intestines themselves;” of

^u In loco modo citato.
221. & Cap. xiv. pag. 223.

^w Lib. IV. Cap. xiiii. pag.

“ of which the one takes up its seat within the
“ smaller, and the other within the larger. The
“ former of these is acute, or of short continuance;
“ but the latter may hold out a considerable time.”

But he judges the malady to be seated principally about the cæcum, and therefore proposes, that the pains are more frequently observed on the right side. But since the large intestines are destined to collect together the fæces, and retain them often for a long space of time, therefore they are the better enabled to bear a distention from their contents, without much damage to them; nor are the small intestines so soon disturbed in their office when the obstruction is seated in the larger intestines. Moreover in these last there is a more easy and ready conveyance for medicines in the form of clysters, to reach immediately the parts affected; from whence, therefore, it is apparent, the danger is justly to be esteemed less, and the cure more easy when the malady is in the larger, rather than in the smaller intestines.

But when the rectum is invaded with a phlegmon, the same symptoms arise as when the hæmorrhoidal vessels are turgid with a thick blood, and so stop the passage of the gut, and compress the parts adjacent, as to intercept the intestinal fæces, while there is also a continual tenesmus, or troublesome inclination to void stools. From whence it is evident this malady must be often mistaken for the blind piles, which are said to attend, when all the symptoms which usually accompany the swelled or bleeding piles, infest the patient, without any apparent tumour of the anus outwardly, only the vessels are dilated inwardly after the manner of varices; and this the more so, as the intestinum rectum is often inflamed by the swelling piles. Nor yet can a mistake of this kind be of any very mischievous consequence, since both maladies require almost the same treatment: however the acute fever, which is an inseparable companion from inflammation, will in this

doubt afford a principal part of distinction. But since in men the intestinum rectum is contiguous with the neck of the bladder, therefore this last being thence irritated, will often produce a troublesome strangury, as *Hippocrates* * hath observed to us ; but that the same malady may arise from the swelling of the blind piles, daily observations in practice assure ; and even I have known an intire suppression of the urine from the same cause, and which was immediately cured when the swelled hæmorrhoidal vessels broke open, and made a plentiful discharge of blood by the anus.

But it is apparent enough a phlegmon in the rectum must be still more easily curable than that of the colon, as the efficacy of topical remedies ; more especially warm bathings and fomentations, may here be immediately applied to the affected parts ; and that the malady may be here also longer sustained without danger of its being fatal, provided the whole tract of the intestines above be free from the same complaint. But when the inflammatory matter being resolved, makes its way through the extremities of the dilated vessels, and relieves the affected parts, it afterwards escapes from the body by stools, but not without pain and uneasiness ; for which reason 'tis said in our present aphorism to be carried off by a dysentery ; but by one that is mild or moderate, somewhat bloody, or bilious ; for in that case the same kind of matter is expelled from the inflamed parts, as we observed in respect to the morbid matter concocted and excreted by expectoration or spitings, to carry off a peripneumony ; upon which subject you may consult what was said at §. 830. But as the intestinum rectum is lined with plenty of mucus, that the fæces may be commodiously evacuated, therefore from the irritation of the inflamed gut there is here usually a great quantity of the said mucus evacuated ; and the like increased discharge

we

* Aphor. 58. Sect. V. Charter. Tom. IX. pag. 230.

we see is also made in other parts, that naturally are supplied with mucus, if they are invaded with a phlegmon. Thus for example, 'tis well known what quantities of mucus are excreted, when the tonsils, uvula, and palate are inflamed: upon which subject see what was said at §. 805. But a tenesmus, or perpetual and uneasy desire to stool, is here one of the most troublesome symptoms, as *Hippocrates*^y hath observed to us in the following words: *Si rectum intestinum inflammetur, & dolor prebendat & febris, & ad alvum exonerandam crebro desideat, nihilque dejiciat, & a pituita videatur anus procidere, interdum etiam urinae stillicidium prebendat, qui morbus oritur, quum pituita ex corpore in rectum intestinum incubuerit*: “ If the intestinum rectum be inflamed the patient is invaded with pain and fever, goes frequently to stool without voiding any thing, while the anus seems to fall down with the mucus or phlegm that abounds; and sometimes even a strangury or difficulty of making water will also attend, which distemper ensues when the mucus or phlegm of the body drains into the intestinum rectum.” From thence we also understand the reason why *Hippocrates*^z in another place says, that a tenesmus turns into a dysentery; namely, when the inflammation in the rectum excites a tenesmus, and then the distemper goes off by a mild, or somewhat bloody dysentery. As also why in another place^a he observes, “ that in a tenesmus blood and mucus are discharged;” *in tenesmo sanguinem & mucum secedere*; and soon after he adds, *Ac fit quidem ex iisdem a quibus & dysenteria verum imbecillior & brevis & non letalis*; “ and it springs from the same causes with a dysentery, but weaker; and is neither fatal nor of long duration.” For it is to be noted that a dysentery is troublesome, but not

^y De Fistulis Cap. v. Charter. Tom XII. pag 143. ^z De Morbis Cap. II. Charter. Tom. VII. pag. 533. ^a De Affectionibus Cap. VII. ibidem pag. 628.

not always mischievous; even sometimes 'tis salutary, when it carries off the matter of the disease, as *Hippocrates*^b observes to us in general, when he says, *Hujusmodi enim egestionēs etiam eos, qui prius sunt in corporibus, morbos sanant; antiquiores quidem diuturniore tempore; recentiores autem in paucis diebus submovere possunt*: “ For these kinds of discharges
 “ cure those diseases that are before formed in the
 “ body; the old complaints they carry off by a
 “ longer continuance, and the more recent ones they
 “ may remove within a few days.”

Having thus considered what relates to the difference of this malady, according to the various parts of the intestine, in which it resides; it remains next that we review those particulars which regard the cure.

S E C T. DCCCCLXIV.

THIS malady being known to be present by the fore-mentioned signs (§. 959, 960.), the cure thereof must be immediately attempted by the most powerful endeavours, to be accomplished. 1. By large and repeated blood-lettings, as before in a pleurisy (§. 890.). 2. By a diligent use of laxative, diluent, and cooling clysters, often repeated, to the number of three, four, or more in a day. 3. By continually drinking of the like laxative, diluent, and cooling liquors, with a prudent interposition of opiates, and of such medicines as are found to be contrary to the particular cause (§. 959.). 4. By fomentations of the like kind, applied to the whole abdomen, more especially of living animals that are young, and of sound health, split open and applied. And in the

^b Praedictionum Lib. II. Cap. xiiii. Charter. Tom. VIII. pag. 821.

the mean time. 5. By a careful avoidance of all things acrid, forcing or heating, taken either as drinks, foods, or medicines; together with motion of the body, or passions of the mind. 6. By holding on in the same course or use of what we have here prescribed, until the malady is compleatly quelled or removed, without having made any returns during the space of three days.

The intolerable pains, and the imminent danger of a suddenly fatal gangrene in the present malady call immediately for the most powerful and ready helps; and therefore a speedy recourse must be had to all the known remedies or assistances which reason and experience have taught us to be effectual in this urgent complaint.

1.] How efficacious a remedy blood-letting is for the cure of inflammation has been already often declared; and the universal consents of all the best physicians confirm the utility of this remedy. But in the cure of the present malady *Aretæus*^c very well advises no remedy to be used but what is equal in strength and speediness of operation to the urgency of so dangerous a complaint; and therefore he directs a vein to be opened in the arm with a large orifice, that plenty of blood may be suddenly exhausted even till the patient faints away. For he well knew the violence of the pains in this malady to be such, as required his approbation to so considerable a relief as must be given for some time to the pains by bleeding ad deliquium; for although it might not remove the cause itself of the distemper, it must infallibly take off the sense of the excruciating pains for a while. But then *Aretæus* only applauds this audacity of blood-letting, where the cause of the malady appears truly a phlegmon; for if there be no inflammation, he

advises

^c De curatione morbor. acutor. Lib. II. Cap. v. pag. 105.

advifes this difcharge to be omitted. But yet, if the caufe of the malady be a mere cramp, if it be not fpeedily relieved by emollient and nervous medicines, a true inflammation is to be feared as the confequence; and therefore in this cafe alfo blood-letting may be allowed, only in a more moderate quantity. More than this, as we declared at §. 141. *Galen* applauds copious blood letting, not only for ardent fevers and violent inflammations, but alfo for the relief of the moft fevere pains. If therefore the feverity of the pain urges, although there be no acute fever or violent heat of inflammation with it, blood-letting will however be of ufe to prevent a phlegmon, which is always the confequence if the pain continues long. The eminent Dr *Sympfon*^d affures us, he had opened a great number of perfons deceafed of a volvulus or painful ftoppage in the bowels, and always found that the inteftines were inflamed. From hence we therefore juftly conclude this malady to be always allied to inflammation, either as the antecedent caufe, or as a confequent and fpeedy effect. But the neceffity of blood-letting to be repeated, is pointed out to us by the violence of the pain, fever and heat; upon which fubject we treated copioufly enough at §. 890. No. 1. where we defcribed the cure of a pleurify.

2.] What confiderable ufes emollient and cooling clyfters have towards moderating the too great violence of fevers, was formerly declared by us at §. 610: and therefore in the prefent cafe they may be of fervice, fince the refolving of an inflammation excited in the body, can only be hoped for when there is a fedate motion of the humours (fee §. 386.) Again, if the feat of the phlegmon be in the larger inteftines, the moft emollient fomentations may be applied immediately to the inflamed parts, where they will relax the ftuffed-up veffels, and dilute what is impervious. But where the fmall inteftines are inflamed, 'tis true, that clyfters cannot naturally penetrate fo far as to reach

^d Medical Effays Tom. V. part. 2. pag. 664.

reach the part itself, yet the large intestines being filled with such liquors will apply them as a warm bath to all the adjacent parts, and by that means be of service. For there is nothing so serviceable for relieving cramped or convulsed parts as the application of warm and emollient remedies; from whence one may also hope at the same time for a safe and effectual relief of the pain, (see §. 234.) Barley-water, oat-gruel, decoction of linseeds, &c. with an addition of honey and linseed-oil, will satisfy this indication: from whence *Celsus*^e recommends, “the strained cream of barley-gruel, mixed with oil and honey, without any other addition;” *percolatum ptisanæ cremorem cum oleo & melle, sic, ut præterea nihil adjicitur*. And if the pain ceases not by that, he orders three or four cups of warm oil to be thrown into the bowels by the anus. But how efficacious, sweet and warm oil is to relieve pains that arise from a distraction of nervous parts is apparent from what *Galen* experienced in himself, as we related it at §. 164, for which reason *Aretæus*^f directs, after the fæces are evacuated, to inject warmed oil with juice of rue; “because, if it stays within the bowels, it will perform the office of a foment to them;” *illud enim, si intro moretur, fomentum intestinis proprium est*. But these both may and ought to be often repeated to relieve so severe a pain, and relax the convulsive strictures upon the bowels. Sometimes indeed, although but rarely, there is such a cramp or constriction of the anus, that even the pipe for conveying the clyster can gain no admittance: which the celebrated *Hoffman* has observed^g. In that case the anus ought to be anointed with the most emollient liniments or unguents; or it may be fomented by sitting in a perforated chair over the warm vapours of a bath until it relaxes.

3.]

^e Lib. IV. Cap. XIII. pag. 222.

acut. Lib. II. Cap. v. pag. 105.

mat. Tom. IV. part. 1. Sect. 2. Cap. XII. pag. 552.

^f De Curat. morbor.

^g Medicin. Ration. Systemat.

3.] All the relaxing, attenuating and cooling remedies that were recommended for a pleurisy, will be likewise commodious for the present complaint: but as an inflammation of the bowels is commonly attended with cramps, therefore all the most emollient remedies will be jointly convenient. For the same reasons too a prudent use of opiates is here recommended; since we know not of a more powerful relaxer of convulsed parts than opium, as daily experience confirms to us: but even these will not be convenient, unless blood-letting, and the use of clysters have been premised, to reduce the incrementive state of the phlegmon: for without such precaution 'tis possible, that while the pain is rendered insensible by opiates, the causes of it may yet operate, and destroy the affected parts unexpectedly by a gangrene. For thus *Aretæus*^h after copious blood-letting, and drinkings of warm water with oil, oily clysters, fomentations, and the like, recommends anodyne medicines, more especially the giving in a draught a larger portion than usual of the *viper medicine*; which appears to be the *theriaca* of *Andromachus*, who altered the *mithridate* of *Damocratis*, by an addition of vipers-flesh, with an increase to the quantity of opium. 'Tis also to be observed, that he orders the dose to be larger than usual, that it might the more powerfully quiet the pains and the cramps. *Trallian*ⁱ has also recommended a discreet use of opiates when the powers are strong, and the pains violent or pressing. But he prudently adds, provided the powers are strong; for when this malady inclines to be fatal, the pulse becomes weak and intermitting, as will be shewn at §. 969, while a gangrene follows, with a sudden extinction of all the severe pains, and also of life itself. But if opiates were given in this case, the sudden cessation of the pain that denotes the gangrene would be ascribed to the opiate given, and probably the death of the patient likewise, with great
infamy

^h De curat. morbor. acut. Lib. II. Cap. v. pag. 106.
X. Cap. 1. pag. 578.

ⁱ Lib.

infamy to the physician. Sydenham^k, who is so universally esteemed for his candour, and most exact observation in diseases, made use of the same method: namely, after copious blood-letting, he gave a dose of his liquid laudanum; but if peccant humours, or corrupt remains of what had been swallowed into the stomach, caused any oppression, he first ordered some thin liquor to be rejected again by vomit for cleansing the stomach; and the same is also the advice of Aretæus. But in the more violent pains Sydenham scrupled not to give his laudanum in large, and in repeated doses: and even in another place^l he says, that if the pain and vomiting returned, after blood-letting and the use of a purgative, the stools yet remaining obstinately arrested or bound up, he gave then a paregoric every four or six hours; *donec intestinis quies omnimodo inducatur, ac proinde motus eorum naturalis deorsum versus restitatur*; “until the bowels perfectly recovered their tranquil state, and in consequence of that resumed their natural motion downwards.” For at such times the cramp being removed from the bowels by an opiate, a cathartic will excite them to stools, although in other cases a narcotic usually binds up the intestines.

But since it was declared at §. 959, that this malady most frequently arises from some acrid matters of various kinds; therefore in the cure, such remedies are also to be chosen as are of a nature opposite to the known acrid cause. If it be an acid acrimony, which we commonly meet with upon the bowels of infants, that excites this distemper; in that case things which absorb and weaken acids are to be administered: but, on the contrary, if any putrid matter gives birth to the complaints, those things that are already acid, and easily acescent will afford the best remedies, more especially when they are plentifully diluted with water. In other cases, where the nature

^k Sect. IV. Cap VII. pag. 260.
de novae febris ingressu, pag. 672.

^l In Scheda Monitoria

nature of the acrimony is doubtful or unknown, or where the fretted membranes can only support the softest liquors; in such cases, watery, oily, mucilaginous, and emollient decoctions will be always serviceable, as they weaken all acrimony.

4.] For here every thing capable of rendering service towards easing the pain, and of preventing a dangerous inflammation following, are to be assembled together at one and the same time against the urgent malady. This is what *Aretæus*^m also recommends to us in the following words; *Ubique enim quisque omnia dolorem levantia faciens juvat*; “for all kinds of medicines from every quarter, which relieve pain, will be of use here.” So likewise *Celsus*ⁿ commends “the application of warm cataplasms, laid on even from the breasts down to the groins, and to the spinal bones of the loins; and to be often renewed or changed: or even to immerge the patient all over in hot oil;” *calida cataplasmata admove, eaque imponere a mammis usque ad inguina & spinam; ac saepe mutare. Imo totum hominem in calidum oleum demittere*. This advice he gives, that all the parts may be relaxed as much as possible, and that a softness may be introduced throughout all the contents of the abdomen, as a state the most opposite to convulsive cramps or constrictions in which all the parts are found with a rigid tightness or hardness: for thus I have observed, in a man who died in two days time of this malady, that the whole belly formed a flat, because the abdominal muscles had by a *tetanos* or rigid cramp violently compressed all beneath them. Hence it is, that *Sydenham*^o observes to us, that the bowels are sometimes infested with such a constriction or tight compressure, as if they were tyed round with a roller. But at §. 234, it was

ans,

^m De curat. morbor. acutor. Lib. II. Cap. v. pag. 106. ⁿ Lib. IV. Cap. XIII. pag. 222. Hippocrat. de morb. Lib. III. Cap. XIII. Charter. Tom. VII. pag. 588. ^o Sect. IV. Cap. vii. pag. 259.

ans, that oily liquids made warm afford one of the best remedies for relieving or curing a tetanos, if the rigid or convulsed parts are continually fomented with these. Also *Celsus*^p recommends both for the cure of a tetanos, and for the cure of the present malady, *in calidum oleum totum descendere, vel in aquam calidam, in qua foenum graecum decoctum sit, & adjecta olei pars tertia*; “to let the patient descend
 “with his whole body into a bath of hot oil, or into
 “hot water, in which fenugrec-seeds have been
 “boiled; adding to the liquor a third part of as
 “much oil.” But there are many observations recorded, which shew the great usefulness of bathing in the present malady*.

But more especially here is recommended, that natural warmth which is administered by the application of slaughtered living animals that are found or healthy, and laid reeking upon the abdomen, whereby at the same time the subtle vapours that exhale from the animal perform the office of a vaporous bath. Also the cawl of a slaughtered beast, taken and applied warm from the belly, being replenished with a subtle or penetrating and emollient oil, will in this malady afford a fair remedy; only it cannot perhaps be always readily had at the time when this urgent complaint calls for it. It was the custom of *Sydenham*^q, in his cure of an introversion or stoppage of the bowels, called the *iliac* passion, always to direct a puppy to be slit open, and applied to the naked belly, during two or three days of the malady.

Moreover *Aretæus* and *Celsus*^r have recommended the fixing of numerous cupping-glasses, without scarifications, unless there be a call for drawing blood this way; for then *Celsus* advises to scarify two or three of the cuppings, and by the rest to draw forth only perspirable or insensible vapours: but upon this head, you may consult what was said on the use of

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cupping-

^p Lib. IV, Cap. 111.

* Medical Essays Tom III, pag.

373, &c.
citatis.^q Sect. I. Cap. 17. pag. 91^r In locis modo

cupping-glasses, affording present relief to flatulent pains of the belly, at §. 650.

5.] From all that has been said concerning the cure of inflammation in general, it is sufficiently apparent, that none but such emollient and resolvent medicines can be here safely used as have no acrimony, nor power to increase the circulation; and that the use of heating medicines must be here highly mischievous, as we before shewed at §. 961. And yet we read in the practice of physicians of the highest note, that acrimonious medicines even of considerable strength, have been often successfully administered; such are purgatives, and many other substances given to restore the free passage, and for the contents to move on, through the tube of the obstructed bowels; which is therefore a point that deserves our consideration.

For it is to be observed, that in this case, besides an inflammation of the bowel, there is often some obstacle that blocks up the tube of the intestine, and which requires to be removed in order to effect a cure. If this obstacle proceeds from an inflammatory swelling only, 'tis then apparent only the soft medicines here recommended will be proper; and that these alone must be given, because an irritation of the inflamed parts, by the stimulus of purgative medicines, or of other acrid matters, must always do mischief. But if some obstructing matter blocks up the cavity of the intestine, whether that præexisted before the phlegmon, or gathered there during the time that the inflammatory swelling streightened the light or tube of the gut, it must in both cases be removed before a cure can be effected. Moreover if a volvulus or introversion of the gut be formed, that must be extricated to restore the free light or cavity of the bowel. Now it is well known, that what we swallow into the stomach is from thence driven forwards, even down to the anus, by the peristaltic or vermicular motion; from whence it seems, that phy-

sicians

Physicians have designed to remove the obstacles with the stimulus of purgatives by increasing this propulsive motion of the intestines; that thus any resistance exceeding the natural and easy worm-like motion, might be urged or promoted even with a convulsive force. Moreover we shewed before, in the experiments of *Peyerus* upon the guts of a frog, that a volvulus or intorsusception of the gut would unfold itself again by the vermicular motion of the intestines; and therefore physicians seem to have hoped, that by an increasing of the said motion by purgatives, it would be induced to have the same effect, by turning out the infolded or confined parts. Others have here given the most weighty metals to be swallowed by the patient, that the gravitation or pressure of these descending through the cavity of the intestines might remove the resisting obstacle; and in this way various things have been tryed, sometimes with good effects, and sometimes with bad. It deserves therefore to be examined in this place what are the dictates of prudential skill, and what the precepts of instructed practice.

We are certainly at first to treat an inflammation upon the bowels in the antiphlogistic method by blood-letting, fomentations, emollient clysters, &c. and therefore it was no laudable practice in those who have treated this malady in its crude or forming stage with such forcing medicines, before these were premised. This is the course upon which the wise ancients steered their practice in the present malady. *Hippocrates*^s drew blood from the head, and from the arms, placed the patient in a tub of hot water, anointed him with oil, and applied warm and moist fomentations; after this he attempted to solicit a discharge of the parched-up fæces, by the use of a suppository to the anus; and then he threw up a clyster into the bowels. Where these had no effect,

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“ he

^s De Morbis Lib. III. Cap. XIII. Charter. Tom. VII. pag. 588.

“ he then orders wind to be blown into the belly by
 “ a pair of smith’s bellows, that both the abdomen
 “ and the cramped bowels might be distended ; and
 “ then withdrawing the bellows, a clyster to be
 “ injected, not prepared of things very warm or
 “ heating, but of such as dissolve and mollify the
 “ fæces : then the patient was to sit in a perforated
 “ chair over a sponge of hot water, charged with
 “ the ingredients of a clyster.” *Folle fabrili indito
 in ventrem flatus immittendus, ut tum ventrem, tum
 intestinum contractum distendas, deinde extracto folle
 clyisma injiciendum ex non admodum calefacientibus, sed
 stercora dissolventibus & emollientibus. Deinde obtu-
 rata sede spongia in aqua calida desideat, clyisma conti-
 nens.* We here see the most efficacious antiphlogi-
 stic method of cure was premised before any at-
 tempts to dilate the sides of the intestines by infla-
 tion, to allow the fæces a descent : moreover from
 another place it appears^t, that he used this method
 of cure, *quum, stercore acervatim combusto in intestino,
 pituita circa hoc colligitur, intestinumque, his nimirum
 confertim induratis, intumescit, nullumque ex his medi-
 camentis, quae per superiora bibuntur, recipit, sed vo-
 mitione rejicit ; neque admota per inferiora clysmata re-
 cipit ;* “ when the excrements being parched up
 “ into lumps, or heaps within the gut, and pituita,
 “ or phlegm, collected about them, the intestine
 “ becomes swelled by the said aggregated fæces,
 “ and therefore admits none of the medicines that
 “ are drunk in by the mouth, but rejects them by
 “ vomiting ; neither does the gut receive what is
 “ administered downward in the form of clysters.”
 But *Trallian*^u, in treating upon the cure of the pre-
 sent malady, expressly advises us in the following
 words, *Nam si citra inflammationem praecedentem fri-
 gidus colicus ileosusque affectus sit, confert tunc uti-
 curatione per utrem. Sin autem, inflammatione prae-*

gressa

^t De Affectibus Cap. vii. pag. ibidem 626.
 . pag. 582.

^u Lib. X. Cap.

gressa, adstrictio alvi aborta sit, haec curandi ratio, praeterquam quod nihil juvet, maxime etiam nocebit;
 “ for if it be a cold colic, or an iliacal affection,
 “ without any preceding inflammation, in that case
 “ it may be of use to practise the cure by inflation:
 “ but if the bowels are locked up by an inflamma-
 “ tion antecedent, the method of cure by inflation
 “ will be not only useless, but even prejudicial.”

And the same caution he gives in respect to purgatives to be administered ^w, when he pronounces,
At si colicum affectum ob inflammationem intestini fieri contingat, neque omnino exhibere audebis purgationem in his, & praecipue in initio, cum inflammatio nondum ad coctionem pervenerit. Qui enim medicamenta ventri ducendo apta praeberere non dubitarunt, aegrotantibus periculorum autores & mortis exstiterunt; “ but if
 “ the colicky complaint springs from a phlegmon
 “ of the intestine, you will never audaciously use
 “ purging in such cases; especially in the beginning,
 “ while the phlegmon is yet crude, or not advanced
 “ to a concoction: for those who have here made
 “ no scruple to administer purging medicines, have
 “ been instrumental in procuring great mischiefs,
 “ and even death to their patients.” So likewise
Aretæus ^x, after a bold blood-letting even till the patient faints, followed with the use of clysters, fomentations, cuppings, theriaca, &c. at last adds, *Si neque dolor remittit, neque flatus neque stercus dejicitur, purgatorium pharmacum, quod hieram vocant, necessario dandum est;* “ but if neither the pain remits,
 “ nor the wind or faeces gains any discharge, ’tis
 “ then necessary to give a purgative medicine called
 “ hiera.” *Sydenham* ^y treading in the same steps, at length gave a purgative when the pain and vomiting had entirely ceased for two or three days. In another place ^z, after copious blood-letting pre-

B b 3

mised,

^w Ibidem pag. 589.^x De Curat. morbor. acutor. Lib. II.

Cap. v. pag. 106.

^y Sect. I. Cap. iv. pag. 91.^z Sect.

IV. Cap. vii. pag. 260.

mised, he prescribed on the next day a lenient purgative; but it was in such a case of this malady as had in its beginning neither the pain so fixed, nor the vomiting so frequent, nor yet any very obstinate insensibility or resistance of the bowels to all purgative operation: but where he believed stronger purgatives to be necessary, he then first gave anodynes to allay the cramps of the bowels^a.

But purgatives have been also administered in form of clysters, after having first premised the use of antiphlogistic, or cooling medicines; and this practice has been sometimes followed with the desired success: For it is known that a quadruple dose of a purgative in clysters performs the same effects with a single dose taken by the mouth. But the most effectual remedy of all that *Sydenham*^b could find, was an inflation of the strongest smoak of tobacco into the bowels by way of clyster: although *Hoffman*^c determines nothing upon his own experience in behalf of this practice; he yet affirms, that it has a great virtue in opening the bowels of horses much bound up; and says he has known the common people to gain instant ease in the severest pains of the bowels, by swallowing the smoak of tobacco. But *Heister*^d observes, that the fumes or thick-smoak of the tobacco ought to be urged in by the anus, until the patient perceives a violent inclination to stools; and that it will be more especially of service when the smoak is taken from the strongest or fattest tobacco. Now this celebrated author confesses he has found this remedy so effectual in the cure or reduction of incarcerated ruptures, that it never gave him any occasion to make use of the knife. He has therefore supplied us with the draught of a proper instrument for the commodious administration of so useful a remedy.

As

^a *Schedula monitoria de Novae febris Ingressu* pag. 672. ^b *Ibidem* pag. 671. ^c *Med. Ration.* Tom. iv. part. 2. pag. 335.
^d *Instit. Chirurg.* part 2. pag. 1101.

As to the use of heavy metalline bodies to be swallowed in this malady, authors differ greatly one among another. *Helmont*^e boldly pronounces that no one can perish of the iliac passion if they do but swallow musket bullets of lead, which by their superincumbent weight may drive forward the obstacle seated in the intestine; but it was his belief that these would be more expeditiously useful, as they were larger, and a greater number of them swallowed, while the patient in the mean time keeps walking, or in an erect posture. But if we consider the gut is expanded above the obstructed part; therefore, these heavy bodies swallowed will lodge in the said dilated parts of the gut, without pressing directly with their weight upon the obstacle. But if a volvulus is also present, of that sort in which the upper contracted part of the gut is received into the lower more dilated portion; in that case they may increase the mischief by urging the upper arrested part of the gut further into the lower and fuscipent portion, next dilated: therefore, it is not without good reason pronounced by *Sydenham*^f, that these weights do but little service; and are frequently the cause of considerable mischiefs. Those who consider the various convolutions or windings of the bowels, will perceive there are no such great benefits to be expected from the swallowing of these, as many persons seem to believe. However the drinking of quick-silver, although equally disapproved of by *Sydenham*^g, is yet applauded by many physicians of very considerable note. *Van Heers*^h assures us he often had given it without any damage; and that in a moment's time it ran through the bowels, bringing with it the obstructing fæces that lay in its way; *Zacutus Lusitanus*ⁱ informs us, that many were cured of the most

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deplorable

^e De flatibus §. 31. pag. 339.

pag. 91.

^g Ibidem.

2. pag. 37.

pag. 358.

^f Sect. I. Cap. iv.

^h Observat. Med. Lib. I. Observ.

ⁱ De medicor. Princ. historia, Lib. II. hist. 97.

deplorable iliac passions by drinking three pounds of quick-silver in hot water, which even saved them from imminent death : and that it may be taken very safely, if it gains a speedy discharge from the body, we are taught by numerous observations ; and since it is the heaviest known body next to gold, it may be able to clear the passages : and, perhaps, it is the safest of all when taken in the greatest quantity ; for then it lies in a collected body, and runs off more easily and expeditiously by stool ; for where it lies a long time in the body, and gains an entrance into the blood by the bibulous veins of the intestines, it may then produce very different consequences. Some years past the drinking of this ponderous fluid was recommended as a panacea in England, and in Scotland ^k, where it was the custom to take an ounce or two of the *argentum vivum* every morning, which by many was continued for a number of weeks, without increasing any of the sensible evacuations. But in the mean time it has appeared, that although it did no immediate mischief, yet after some time it has brought on mischievous effects ; and the distempers of those, who work with quick-silver in the daily practice of their trade, and which often prove both surprising and incurable, sufficiently demonstrate how cautious we ought to be of this practice. The celebrated *Hoffman* ^l gave, in the present distemper of the bowels, half a pound of the purest quick-silver to a woman of forty, with some fat broth taken before it, and after it some flesh-broth, with a few ounces of the oil of almonds, and ordered gentle walking afterwards about the chamber. Her bowels were opened within five hours from the taking, and about an ounce of the mercury came away in the stools, which relieved all the symptoms ; but for above fourteen days after her stools continued mixed with parts of the quick-silver ; and what is the most remarkable,

^k Medical Essays Tom. III. pag. 387.
Tom. IV. part. 2. pag. 335.

^l Med. Ration.

remarkable, when her strength was recovered, she was for above a month troubled with tremblings of the limbs, and great feebleness in her legs. Now observations inform us, the same complaints attend those who incautiously work or dabble with quicksilver; and therefore one may reasonably suspect here, that the mercury not escaping all at once from the body, but staying long within the bowels, produced these mischiefs. But notwithstanding this, it must be owned in so dangerous a malady as that before us, the use of such a remedy, however to be suspected, ought to be put in practice, when we have a prospect of avoiding present death by it.

But we read likewise of other things tryed with success by physicians in the present malady, which yet at first view may seem rather prejudicial. For it is apparent by what is before delivered upon this case, that emollients, with relaxing and diluent drinks, &c. with fomentations prepared from the same materials, are here highly applauded by all physicians; from whence it may seem strange, that things actually cold should appear by experiment or observation to be able to make a cure when all other things have been tryed in vain; and be able even to recover the patient when every body has despaired of him. *Hoffman*^m having in vain tryed the use of blood-letting, clysters, emollients, and various other remedies for the relief of violent pains of the abdomen, in a woman who had a suppression of the menses from a fright; was by the physician that consulted with him, *Naboth*, invited to try the drinking of cold water; to the tryal of which seemingly harsh and detestable method he consented, rather than to appear an unsociable adjutant. But the proposed method of cure succeeded more happily than he expected; two cups of the water being given several times in the day while the body and feet were well covered over; for the copious sweat that ensued was followed with a comfortable

^m Ibidem. pag. 349.

ble sleep, and a removal of all the pains. But *Naboth* also assured him, that he had often in the same case successfully applied linen cloths dipt in cold water. There is in the same celebrated author a case of the like kind related to us out of *Septalius*, in which the afore said emollients above recommended being used for a Spanish nobleman without success, *Septalius* had recourse to opposites ; and although death seemed to be at the door, from the pulse being no longer perceptible, and from the cold sweats, yet he ventured to give plenty of water that was refrigerated with snow, and found that it was followed with the most desirable effects. But as this method of cure may seem rash to many, it may be of use I believe to confirm it by another case. A man aged twenty seven years began to complain of a slight pain in his belly, with an unusual costiveness ; for which various clysters, purgatives, and other medicines were used without being able to procure any stools, while in the mean time all things taken into the stomach were rejected by vomit. The warm bath was tryed, the warm skin taken from a living lamb was applied to the abdomen, and repeated blood-lettings were not neglected, but all without any relief ; and now the case being adjudged desperate, the patient was on the eighth day of the malady carried into a cold room, with the lower half of his body uncovered, and then in every second of time a quantity of cold water was poured upon his feet gradually ascending, until at last the cold effusion was carried as high as the pubes ; and during this he sometime walked, sometimes stood upon his feet on the cold and wet pavement, alternately plunging his feet into a vessel full of cold water. By this method the patient recovered strength, and within half an hour was relieved ; but soon after his pains returned as before, he vomited once, his belly swelled more than before, and he had the most excruciating gripes ; but these were in a few minutes time followed with a copious and liquid evacuation

cuation by stools, intermixed with some indurated fæces, which gave him great relief; and afterwards the fever decreasing, by the continuance of this method the space of three days, with copious discharges of indurated fæces, he escaped from the most imminent dangerⁿ. There is in the same place likewise a wonderful case related, wherein an obstinate costiveness that had continued forty three days inflexible to numerous remedies, was yet relaxed in the space of ten minutes, by pouring cold water twice every minute upon the legs and thighs.

But also in the ancient physicians, in several places we observe, that they sometimes likewise made use of this practice. *Trallian*^o in the cure of a colicky malady arising from hot bilious humours, says, that he used cold water to his patients, whose powers were strong, and whose viscera had no defect: and even he ventures to say, that he had successfully thrown up things actually cold, by the anus. *Hippocrates*^p recommended the pouring on plenty of cold water for a cramp, in a young man of a fleshy habit in the midst of summer: and the same likewise for an erysipelas not ulcerated^q. Even he informs us^r, that in convulsions, the affusion of much cold water, relieved and terminated the pains. But in this malady there is both an obstinate cramp or convulsion of the intestines, and an inflammation of them present with immense pains.

It appears then from what we have lately related, how much may be sometimes effected to the most happy ends by a bold method of practice in the most despaired-of cases; and that if any one shall presume to condemn the like as rash attempts, let him remember what *Celsus*^s has formerly pronounced in treating upon the ancient method of giving cold water in fevers, practised by *Petronius*: *Sed, cum eadem*

omnibus

ⁿ Medical Essays Tom. V. part. 2. p. 893.

^o Lib. X.

Cap. 1. pag. 585.

^p Aphor. 21. Sect. V. Charter. Tom. IX.

pag. 206.

^q Ibidem pag. 208. Aphor. 23. Sect. V.

^r Ibidem

pag. 210. Aphor. 25. Sect. V.

^s Lib. III. Cap. ix. pag. 138.

omnibus convenire non possint, fere quos ratio non restituit, temeritas adjuvat; “but since it is impossible for the same methods to be suitable for all cases; those wherein reason or skill affords no cure, are yet often relieved by hazardous experiment.” And again, “*Et alibi quin etiam morborum in iisdem hominibus aliae atque aliae proprietates sunt, & qui secundis aliquando frustra curatus est, contrariis restituitur saepe*”; “the properties or affections of the same diseases are at various times different even in the same persons, and those who are sometimes in vain attempted to be relieved by the most promising or agreeable methods, are yet often recovered by their contraries.”

But it may be justly accounted a practice still more audacious to cut into the abdomen, pull forth the intestines, search out and replace the involuted part of the gut by the fingers, and then to replace the bowels, and sew-up the belly. Yet this is a practice proposed to us by *Barbette*^u, rather than to give up the patient to certain death. Even in *Bonetus*^w we read of the operation actually performed by a bold young surgeon, upon a lady of consequence, and with the most happy issue: and formerly the late celebrated anatomical professor in Holland, *Nukke*, procured by his order the operation to be performed by a very expert surgeon upon a woman of forty years old, who by able witnesses appears to have lived above twenty years afterwards^x. A like order for the operation we read to have been issued by *Paraxagoras*, who even, as *Cælius Aurelianus*^y tells us, directed the gut to be cut asunder, and afterwards sewed up again, when the dung was taken out of it: but then he tells us also at the same time, “that Paraxagoras rather intends to acquaint us with a surprising case of mortality than of a cure:” *Magnificam*

^u In Praefatione pag. 19. ^w Anatom. Practic. Lib. IV. Cap. 1.

^x Anat. Pract. Lib. III. Sect. XIV. Tom. II. pag. 228. ^y In Dissert. Inaug. Corn. Henr. Velle pag. 19. ^z Acutor. morbor. Lib. III. Cap. xvi. pag. 244.

nificam mortem Paraxagoram magis, quam curationem voluisse scribere. But in a case of this difficulty who can say he is able to determine whether the stoppage be from an involution of the gut or not? or who will pretend directly to find out the affected part of the bowel, that is the seat of the malady? For it is usual, when this malady approaches to its worst state, for the pain and distention to be spread throughout the whole abdomen. From whence it is evident enough, that nothing but the most pressing circumstances can persuade to the practice of so cruel an operation, in which the belly must be cut into, the convolutions of the guts over-halled, and the seat of the obstruction searched out in the living patient.

6.] Although by the methods hitherto directed, the pains may have been removed, and the fever subdued; yet we are still to consider, that the portion of the bowel, which was the seat of the malady, may for a long time be liable to an easy relapse, by its sensibility; by which even slight irritations from the ingested nourishments, that are either acrid or difficult of digestion, may cause a return of the pain, cramp, and inflammation as before. For all things taken into the stomach must pass by these ways, of which *Sydenham*^z being well aware, has therefore pronounced this malady to be more than others extremely liable to a relapse; to prevent which he recommends a very thin diet almost entirely of chicken broths, and in such quantities as will barely suffice to maintain life. For it ought to be one care not to load the bowels with too great quantities even of aliments that are light or thin, and the easiest of digestion; and therefore such ought to be given repeatedly in small quantities, that so the bowels, formerly overstrained and dilated, may have opportunity to contract themselves and gradually recover their lost strength. Hence it is, that *Celsus*^a cautions against
the

^z Sect. I. Cap. iv. pag. 92. Et Sect. IV. Cap. vii. pag. 266.

^a Lib. IV. Cap. xiii. pag. 222, 223.

the use of aliments that are strong, heavy, or flatulent ; and even after the pain and fever have vanished, he allows only water for the drink, lest the as yet weakened bowels should be injured ; admonishing likewise ; “ That all vinous and acid liquors are “ foreign, or bad for this malady ; ” *Omne vinolentum, sive acidum, huic morbo alienum esse.* And for a long time after the recovery he advises abstaining from bathings, walkings, and other exercises of body : “ For that this is a distemper which usually re- “ turns very easily ; and unless the bowels are pre- “ viously well confirmed in their strength, upon tak- “ ing cold, or some exercise of body, the patient re- “ lapses.” *Nam facile id malum redire consuevit, & cum frigus subit, sive aliqua jactatio, nisi bene jam confirmatis intestinis, revertitur.*

S E C T. DCCCCLXV.

AFTER the preceding malady (§. 959, 960.) has been neglected to be duly treated, or has continued constant and violent for above three days together ; if then there follows an irregular shivering throughout the body without any known cause, with a dull pain of heaviness in the affected part, instead of the first or most acute, ardent, and distracting pain, this will be a sign that an abscess is there about to form itself ; from whence (when it breaks) in about the space of a fortnight, there will be a discharge of matter : but if this matter flows into the capacity of the abdomen, it there becomes productive of numerous mischiefs, like those mentioned in §. 939 ; but if it flows into the cavity of the intestines, it occasions a purulent dysentery more or less copious, and of longer or shorter continuance, according

according as the nature of the ulcer there formed shall influence or govern the flux; but from thence the membranes or coats of the bowels are often slough'd, or cast off entire in the stools, and frequently is produced a consumption.

Concerning those signs which inform us an inflammation of the internal parts is changing into a suppuration; we have already often treated in the histories of the acute inflammatory distempers before given; so that all we formerly proposed on this subject will be here likewise true. But an abscess formed in the bowels may discharge its contained matter two ways; either into the capacity of the abdomen, or into the cavity of the intestines. What mischiefs we are to fear from the matter of a broken abscess draining into the capacity of the abdomen, we have before declared at § 912, and 939. But when the matter drains into the cavity of the bowels, it finds a ready way out from the body in the stools, so that by the purulent dysentery which follows, the patient is often recovered, and gains a complete cure either sooner or later, according to the different magnitude and condition of the abscess, as every one may easily perceive. But as sometimes the inflamed bowels grow together with the peritonæum, the abscess may in that case break outwardly, after the same manner as we observed in treating upon a phlegmon of the liver and stomach. However such an outward rupture in the present malady seems very seldom to happen, or at least the writers of observations have very rarely mentioned it. *Aretæus*^b indeed assures us, that in a certain patient he cut open an abscess of the colon in the right side, near the liver, from which a great quantity of matter was discharged, and some of the matter came away likewise through the kidneys and bladder for many days, the patient afterwards recovering.

^b De causis & signis morbor. diuturn. Lib. I. Cap. ix. pag 37.

covering. But if such an abscess remains long unbroken, the matter becoming more thin and acrimonious by rest or confinement, will be drunk up by the bibulous veins, which open throughout the whole extent of the confining membranes of the purulent bag, from whence being mixed with the blood, it may there cause a purulent cacochymia (§. 406.), from whence a tabes or consumption is to be feared, as we shall shew at §. 1214.

But since a phlegmon or inflammation (see §. 374.), and the suppuration which follows it, are the most frequently seated in the cellular substance, which substance anatomists have plainly discovered in the intestines; it sometimes appears that a suppurative tumour in the cellular membrane of the gut, causes a separation of the internal villous coat from the other tunics of the bowel, so that it shall be afterwards discharged by stool, with its entire figure resembling the hollow tube of the intestine, and not without striking great fear and surprise into the patient and his attendants, who supposing the gut itself to be come away, imagine there can be no further hopes left of a recovery. This accident is also very fairly observed by *Aretæus*^c to happen likewise in dysenterical persons; for his words are, *Nonnunquam oblongum quiddam in pluribus non discretum, instar sani intestini dejicitur, & ignaris rei suspicionem præbuit intestini: ita autem se habet: Intestinorum tunicae perinde ac ventriculi geminae sunt, & altera alteri oblique super injecta est: igitur cum illarum connexio (διπλόν) solvitur, interior tunica secundum longitudinem abscedens foras exit, exterior sola manet, & carnosa efficitur, & cicatrice solidatur, sanescuntque homines & noxa soluti vivunt: id vero inferius intestinum solum patitur; in causa est tunicarum carnosa substantia.* “ Sometimes an oblong body, somewhat like a sound gut, is discharged entire, without being divided into several parts; and, therefore,

^c Ibidem Lib. II. Cap. ix. pag. 61.

“ fore, occasions the ignorant to suspect it for a real
 “ intestine; but the true case is this: The coats of
 “ the intestines, like those of the stomach, are form-
 “ ed in two strata, one of which is spread obliquely
 “ over the other; and, therefore, when the diploë,
 “ or spongy connection of these is dissolved, the in-
 “ ward coat being slough’d, or cast off from the rest,
 “ is excluded from the bowels, while the outer coat
 “ left behind becomes more fleshy, and heals up
 “ with a scar or smooth cuticle, whereby these pa-
 “ tients recover, and live afterwards in health; but
 “ the intestinal tube will allow this exfoliation only
 “ in its lower part, because there the coats are of a
 “ fleshy substance.” The moderns have also fur-
 nished us with like observations^d, which serve to
 confirm what *Aretæus* has now told us; for the inner
 coat of the intestinum rectum was cast off, and the
 patient afterwards recovered to health. But that the
 same, or a like separation may also happen throughout
 the whole tract of the intestines, seems highly pro-
 bable, although in that case the slough’d membranes
 are rarely continued in one entire tube, but often ap-
 pear in form of an unshapen mucus, by the time
 that they are excluded in the stools: but if the said
 mucous substance be put in clean water, a membra-
 nous and vascular structure then plainly appears.
 The celebrated *Symson*^e saw in the body of a person
 who died phthysical, and with a fistula of the anus,
 that the villous coat of the bowels was in several
 places absent, and many of the abraded fragments
 were to be seen within the cavity of the intestines.
 But this unhappy person before death could bear al-
 most no solid food, by reason of the uneasiness he
 perceived from it in his stomach and bowels; and
 for three weeks before his death he could only bear
 water drank in small quantities at a time. In the

^d Tulp. observat. medicar. Lib. III. Cap. xvii. Anton. Bene-
 voli osservazione 18. pag. 150. ^e Medical Essays Tom. V.
 part. 2. pag. 655, &c.

same place it is also proved by many other observations, that the inner coat of the intestines may be separated by slight causes, and be again renewed; for even the fæces much indurated, and urged through the large intestines, have been observed to make an abrasion of it; and in those who have long lingered in dysenteries, a great quantity of such mucus has been separated, although afterwards they have been restored to a perfect state of health.

S E C T. DCCCCCLXVI.

WHEN the said abscess, or suppuration of the gut (§. 965.), is once known to be present, immediately all nourishments that afford much fæces, of a thick, hard, or acrimonious nature, must be prohibited; and the patient must be supported or fed entirely upon broths, that are boiled with roots moderately deterfive; balsamic and deterging decoctions are likewise to be drank plentifully, and thrown into the bowels under the form of clysters; and lastly, the medicinal Spaw-waters are to be taken plentifully as a drink, and in the use of them the patient must continue 'till the cure is compleated.

When the signs teach us such an abscess is formed in the bowels, all the like methods are to be pursued which were formerly prescribed at §. 402. The maturation, therefore, of the crude inflammatory matter is to be promoted; and since the most convenient discharge for the matter is that through the cavity of the bowels, whereby it may be discharged in the stools, therefore clysters of decoctions from the emollient plants often injected, and the like decoctions often drank, will be of service to relax and mollify

mollify the surface of the bowels. But when from the easement of the pain, and discharge of the matter by stools, we know the abscess to be broken, we are then to gently cleanse or deterge the ulcerated parts, and bring them to the state of a clean wound, disposed to heal, or consolidate; and this by infusions of the vulnerary plants with honey, such as agrimony, flewellin, golden-rod, St John's-wort, &c. But above all things care must here be taken not to allow any thing to be taken into the body under the name of foods, or drinks, that are of an acrimonious nature, or are easily disposed to degenerate, and acquire an acrid state, by heat and rest within the body; and all things that afford gross fæces are likewise to be avoided. The broths of flesh meats will therefore afford the best nourishments, as they are very sufficient to sustain the patient's strength without incumbering the bowels with any thick or indurating fæces. For the same reasons the whey of milk, well clarified from its curdey parts will be very serviceable, while milk itself cannot be used, because it is so readily apt to turn sour, and leaves many gross, or hardening fæces within the bowels, as plainly appears in infants that are nourished only by the breast-milk. But in the flesh-broths may be boiled the roots of viper-grass, vetches, succory, and the like (of which a form may be seen in the *Materia Medica*, at the number of the present aphorism); but then these broths are to be afterwards strained, that nothing of a gross consistence may pass the bowels before the ulcer is healed. But a copious use of infusions that are vulnerary, with the whey of fresh milk, and medicinal Spaw waters, will conduce to wash out from the blood the absorbed parts of the collected matter, while they dilute and soften all the other humours discharged into the bowels, more especially the bile, that they may cause less irritation upon the ulcerated bowel. When the ulcer is once cleansed, the chalybate waters will by

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their gentle astringency promote the cicatrization, or final cure of the parts affected : and when for several days there has been observed no discharge of matter by the stools, nor any pain remaining in the belly, then more solid foods may be gradually given, of barley, rice, bread, the flesh of young animals, &c. until at length the patient may descend to the diet which was customarily used in health.

S E C T. DCCCCCLXVII.

BUT if this phlegmon of the bowels springs from the most violent causes (§. 959.), and has produced the severe symptoms (§. 960.), it may then easily form a gangrene (§. 388.) in the parts of the bowel affected (§. 959, 963.); which miserable consequence will be afterwards fatal.

Here you may consult what has been said upon a gangrene at §. 960, which for the most part follows very speedily after a violent inflammation of the bowels:

S E C T. DCCCCCLXVIII.

WHICH approaching gangrene we easily foresee, from having observed the cause and symptoms preceding (§. 967.), if at the same time too there be no kindly resolution (§. 963.), nor apparent signs of making a cure (§. 964.).

If a fixed pain shall continue very severe in one certain place, with a violent fever and stubborn constipation of the bowels, while every thing taken into the body, is returned by vomitings, or if the cure was neglected in the beginning of the malady, or no relief obtained from it; we thence conclude, that

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Sect. 969. of the B O W E L S. 389
such a phlegmon of the bowels inclines to a gangrene.

S E C T. DCCCCCLXIX.

BUT that this gangrene is formed we are taught by the proper signs having gone before (§. 968.), followed with a sudden relief to the severe pains without an apparent cause; the pulse in the mean time continuing weak, intermitting with cold sweats, and a foetid dysentery or flux of ichorous humours, appearing grey, livid, or black, and a discharge of the stools that is insensible, from whence a quiet death speedily ensues.

The great danger of such a sudden remission of the violent pain, without an apparent cause, an acute inflammatory maladies, has been before shewed in our history of a pleurisy at §. 904; but the same is also true of the present complaint, and sometimes deceives those who are less skilful. For the most severe pain and obstinate constipation of the bowels, usually attend an inflammation of them; but when the phlegmon tends to an irretrievable gangrene, both the pain ceases, and the bowels generally become relaxed with loose stools; from whence those who attend upon the patient, and sometimes their physician imagines the patient to be out of danger, when even death speedily follows. But here the cadaverous visage, the leaden colour of the lips, the coldness of the extremities, with anguish, an inflated belly, and extreme weak and quick pulse, afford to the skilful physician undoubted signs of instant death. Therefore *Hippocrates*^f pronounces, *A dolore vehementi partium circa ventrem extremorum refrigeratio, malum*; “ that a coldness of the extremities following after a
C c 3 “ violent

^f Aphor. 26. Sect. VII. Charter. Tom. IX. pag. 304.

“ violent pain in those parts or viscera, which border upon the abdomen, is a bad or fatal sign.” For when a gangrene invades the parts that are inflamed, the pain ceases, and the stretched membranes that were before hard become flaccid, and from thence a free course or passage through the gut to the anus is restored, while its fabric is dissolving by a gangrene. But the most experienced physicians have always entertained the worst apprehensions, when the bowels before constipated become relaxed with such signs. Accordingly Baglivi^s has given us the following practical axiom; *Gravi iliaco si superveniat alvi fluxus, paucis post horis morietur, nam sphacelata sunt omnia, hinc letalis fluxus. Et si iliaco tumor ventris veniat, & flatus copiosi pedendo exeant, brevi morietur*: “ If a flux of the bowels comes upon a violent iliac passion, the patient will be taken off within a few hours; for all the parts of the bowel are then mortified, from whence proceeds the fatal flux. And in like manner the patient is also soon taken off when a tight distention of the belly attends an iliac passion, and the flatulencies walking to and fro, discharge themselves in the flux.” The same is also confirmed to us by *Tulpius*^h and many others.

But a surprising case has taught us, that the fæculent matter confined in the bowel, shut up by a volvulus or intorsusception, has by a rupture of the intestine, passed into the capacity of the abdomen; and by there stagnating has eaten its way through the intestinum rectum, in which an opening has been found in the deceased body that gave a discharge of the contents from the abdomen through the anus: but here the distemper is equally fatal, although it may be somewhat longer protracted; for in this case the patient survived to the thirteenth day, although the ileum intestine had a threefold volvulus or

^s Prax. Med. Lib. I. pag. 110.
Cap. xli. pag. 161.

^h Observat. Med. Lib. II.

or intusufception, which is a case that rarely happensⁱ.

But the matters discharged by a fatal purging or flux in a desperate iliac passion, before the patient's decease, have the most intolerable smell; partly from their long retention within the bowels, and in part from increased putrefaction by the febrile heat, and to these add in some measure the corrupt sordes or filth that drains from the gangrenous or mortifying parts. But the stools are then commonly evacuated without the patient's knowledge, which is a kind of evacuation from the bowels, condemned by *Hippocrates* as fatal, as was formerly shewn at §. 719.

S E C T. DCCCCLXX.

BUT when this painful malady of the bowels has once advanced to such a gangrenous state, it hardly ever admits of a cure; for any curative treatment must succeed before this, and can finally be only of service when it is conducted after the afore-prescribed method §. 966.

For so much of a part as is invaded by a gangrene putrifies, and the only cure lies in procuring a supuration round the extent of the gangrene, to separate betwixt the dead and the living parts of the vessels, see §. 444. But while this separation is made, the gangrenous crust dissolves into a putrid liquid, after a manner that plainly appears to our view in external parts of the body; but if such a putrid liquid drains into the capacity of the abdomen, all the viscera that fill that capacity will be soon corrupted by it: for 'tis very rarely that a gangrene occupies only the internal surface of the bowel, and leaves its outer coats still sound and living; for in a case of that sort,

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ⁱ River. Observat. Centur. 3. Observ. 26. pag. 63.

the matter may be excluded from the body by stools. 'Tis true, that by numerous observations we are taught (see §. 317.) a very considerable portion of the gut has been lost by a mortification, and the patients have afterwards survived it with a tolerable good state of health : but then always in such cases, there is a way outwards to discharge the gangrenous ichor or matter, and allow the hand of the surgeon to remove the corrupted parts, and either fasten the sound ones together, or to the margins of the outward opening, in such a manner as to form an artificial anus, or door for the intestinal fæces to be excluded, which must otherwise have been collected, together with the gangrenous matter, within the capacity of the abdomen. Moreover when a gangrene follows from a phlegmon of the bowels, all the vital powers are immediately sunk or depressed ; from all which mischiefs duly considered, it will plainly enough appear, that the gangrene is here seldom or never curable.

But since every gangrene is only curable by a supuration formed, to throw off the dead parts ; 'tis therefore evident enough, the same method of cure will be here required, as was before recommended at §. 966. The use of the Peruvian cortex for stopping the progress of a gangrene was formerly shewn at §. 447, whereby the separation of the dead eschars, or corrupted parts, is often so effectually promoted ; and while that was writing, I had as then got no opportunity of asserting the efficacy of the said practice upon my own observations : But at this time I can affirm, by a great number of my own proper experiences, that immortal thanks are due to *Rushworth*, the celebrated surgeon who has merited the acknowledgements of mankind, for the publication of this remedy. But although the progress of a gangrene be thus stopped, and a laudable separation of the dead parts procured, yet the malady will be equally
far

Sect. 971-72. of the B O W E L S. 393
far from a cure, unless the union or continuity of the
intestinal tube can be accomplished.

S E C T. DCCCCCLXXI.

BUT if the usual causes (§. 392.) shall
have here produced a schirrhous, we have
then very different ideas to form of this malady,
which we are therefore clearly to understand.

What the causes are which produce a schirrhous from
inflammation, were before declared at §. 392. But
since great caution is necessary for the treatment of a
schirrhous in this malady, therefore it will be of the last
importance for us to know the signs demonstrative
of such a termination.

S E C T. DCCCCCLXXII.

IF therefore a phlegmon with its symptoms
(§. 392.) be seated in the parts which we
call the bowels or intestines (§. 956, 963.), and
if it there long continues, neither arising to the
highest violence (§. 960.) nor yet terminating
by a resolution (§. 963.), by concoction or me-
dicines (§. 964.) nor by a suppuration (§. 965.)
but leaves after it a sort of stupidity with a con-
stant weight and distraction of the parts, we
are from such grounds led to think a schirrhous
is formed in the bowels.

When therefore the signs teach us an inflammation
is formed in the bowels, of no such great violence as
immediately to produce the worst consequences, but
to hold on a long time upon the parts; it may then
be gradually relieved, but will yet always leave some
footsteps of the first malady, or the complaints may
return

return at intervals, although in a more slight manner, whenever nourishments are taken so as to offend by their greater quantity, or by their being more difficult to digest : likewise when there are no apparent signs of a suppuration formed, one may reasonably expect a schirrhus, which must always give uneasiness, although not very considerable if it be but of a small bulk. In such cases the patients usually perceive a weight and a distraction of the parts, more especially when they dance or go swiftly down a stair-case : but it is rarely that the schirrhus can be outwardly felt or perceived unless in very lean persons, and not even in those unless it be grown to a considerable bulk ; but before it will have gained such a bulk, it must have produced many complaints that are the effects of a schirrhus, and also the signs of a schirrhus present, as they are reckoned up in the aphorism next following.

S E C T. DCCCCLXXIII.

BUT if the said schirrhus follows its own inclination (§. 392.), and produces its appropriated effects (§. 486.) within these parts (§. 959, 963.), it then generates a multitude of grievous and stubborn mischiefs, such chiefly as a numbness, weight, and perpetual increase of the swelling, whereby the cavity of the intestine becomes diminished or streightened, from whence the chyle and fæces stagnate, and exert their forces, chiefly acquired by putrefaction, and stagnation of their matter, upon the resisting parts of the bowels ; from thence springs either an obstruction or an introversion of the gut, a stoppage to whatever is taken into the stomach, an iliac passion or volvulus ; or finally the dry-gripes, or a dysentery from the ir-
ritating

ritating acrimony, convulsions, hiccoughs, vomitings, continual pains, a fever, a wasting of all the fat, and then a consumption of the whole habit for want of nourishment, with death itself.

So long as a schirrhus lies dormant without degenerating towards a cancerous malignity, the swelling is hard, but without pain (see §. 392.), and is therefore easily tolerable : but even then it may give considerable offence by streightening the tube or bore of the intestine, and may even sometimes go so far as wholly to block up the gut, when its increasing bulk shall have compressed all the surrounding parts. *Hollerius*^k has observed, that the gut colon has been gathered up into a hard schirrhus like a cartilage in that part of it which lies next to the kidney, by which its whole internal cavity was intercepted ; but on the right side the colon was extremely large in this patient, who expired after many years of pain in the bowels. *Ruyfch*^l found the gut rectum so much thickened, that it amounted to above an inch in its membranes, which were so much indurated as to make him doubtful, whether he ought to call their substance by the title of flesh or cartilage. But the cavity of the gut itself hardly exceeded that of a straw ; and there was so firm a cohesion of it with the os sacrum, as required the use of a chissel and mallet to make the separation. In the same place also he relates another case of the intestines hardened into a schirrhus. At §. 486, we have also related a remarkable case of a noble child, in whose deceased body was found a schirrhus of the gut ileum, near the part where its final extremity is inserted into the gut colon. These are sufficient to shew, that by most certain experince the present malady may have a seat in the
bowels ;

^k De morbis internis Lib. I. Cap. xli. pag. 325.
^l Anat. Chirurg. Observat. 95, 96. pag. 88, &c.

^l Observat.

bowels; and even it is highly credible, that such schirrhous swellings lurk oftener within the bowels, than is commonly believed, and there give birth to the most stubborn chronical maladies. I visited the mother of a noble family, near the seventieth year of her age, who very rarely had any stools, although she had a good appetite, and eat plentifully: but by the sixth, seventh, and sometimes the eighth day great anguish would arise with a pain of the belly, after which she rejected by vomit a great quantity of mixt matters, which plainly shewed the remains of such foods as were taken within that interval of time. After such an evacuation her appetite returned as before, and she found herself tolerably well, until after a like space of time the same maladies would again return. But she had supported these complaints for twelve years; and although there was not an opportunity allowed to inspect into her body after death, yet there seems to be just grounds for suspecting such a schirrhous obstruction; and since that, I have seen some other cases of the same kind in the course of my practice. But so long as the schirrhous remains dormant or benign, the pains are not continual but return only at intervals; and in the beginning of such cases they only perceive such uneasiness when they take too much or too solid food; but afterwards the same complaints return oftener, as the schirrhous advances in bulk.

But it appears plainly enough, that the ingested nourishments, being thus accumulated by the impeded course of them through the bowels, must by distending the intestines create in them a pain; since they corrupt by long standing, and by putting on a state of acrimony irritate these parts. At the same time we may also perceive, that the malady may be so much longer supported without a loss of the strength, as the schirrhous is seated lower, or more distant from the pylorus. But at length the intestines having been often overstrained by the accumulated contents,

contents, by which their digestive power upon the aliments becomes greatly weakened, and their due absorption of the chyle diminished; in consequence of which follows a slow consumption and death; unless all the complaints are thus brought sooner to the like period, by a degeneration of the schirrhus to a cancer, or from a new inflammation brought upon the bowels, from the compressure or distraction.

S E C T. DCCCCLXXIV.

HERE then medicines prove but of little efficacy, of what kind soever they may be: but the regimen of diet may be conformable to §. 966. And by such a regimen the schirrhus of the bowels may be a long time supported without any great mischief to the patient.

How difficult it is to cure a schirrhus even in those parts which allow free access of the hands, to treat immediately the seat of the malady with fomentations, fumigations, &c. we formerly shewed at §. 490. from whence therefore it readily appears what little reason we have to hope for success even from the most boasted remedies. For if the incipient schirrhus that here forms itself cannot be resolved by the friendly warmth and vapours of the abdominal viscera, aided by the motion of the diaphragm, and abdominal muscles, and the resolving power of the bile and pancreatic juice continually derived into the affected bowels, what small expectations must we have from other remedies. Some chemists have indeed boasted themselves to be possessed of secrets able to resolve schirrhhi; but experience has shewn us their attempts have been in vain tried upon the schirrhhi of external parts. And therefore nothing remains here but to render a malady tolerable to the patient which we
are

are unable to remove. But a schirrhous of the bowels is more especially injurious to the patient by straightening or blocking up the free passage or light of the intestine; and therefore only those nourishments are to be taken which are the most liquid and of the lightest digestion, to prevent such injury: for which reason the same diet will be convenient here, as was before recommended at §. 966.

S E C T. DCCCCLXXV.

BUT if the said schirrhous is by the respective signs (§. 497, 498.) known to be formed in these sensible parts, and to result from the enumerated causes (§. 492, and 495), the patient is then perceived to be under the most deplorable circumstances, of a cancerous case incurable: which circumstances or symptoms are intelligible from comparing §. 498, with the nature, office, and nervous structure of the intestine: but the chief of them are a most sharp and stubborn dysentery, that continually scalds, erodes, and consumes all the parts through which it flows, with most cruel convulsions, and pains that exceed all human sufferance, holding on still fixed in the same parts, till at length death follows as the welcome reliever of such miseries.

What those causes are which convert a schirrhous into a cancer, we formerly declared at the numbers referred to in our text; and in the same place we also related the great mischiefs that ensue from a cancer in external parts, where all the circumstances fall under our inspection by the eye. If then we consider a cancerous ichor, which corrodes the adjacent skin, and dissolves the dressings of lint almost like
aqua-

aqua-fortis, does in the present case distil into the cavity of the bowels, we may thence readily conceive what dreadful mischiefs must ensue, insuperable to all the efforts of art, and only to be terminated by death itself.

S E C T. DCCCCLXXVI.

IF upon the first appearance of a known schirrhous (§. 972.) it be treated in the proper method (§. 974.), that will greatly conduce to prevent this malady (§. 975.). But if this be imprudently attempted to be cured by the use of acrimonious remedies (§. 490. No. 3. and 495, 502.), more especially by violent purgatives, in that case a cancer springs up and rages in these parts: But then here nothing can be allowed but mere drinks of the whey of new milk, spoon-meats of mealy decoctions, or entirely of flesh broths, with the yolks of eggs; to which add the injection of clysters extremely emollient, prepared only from a decoction of linseeds, with the leaves of officinal nightshade, or with white poppy-heads; and lastly, by the use of medicines that defend from acrimony, are anodyne, or moderately opiate, and such as do not easily change into a state of acrimony.

If a schirrhous be known to be present, from the above-mentioned signs, nothing remains but to avoid all things which are apt to turn a schirrhous into a cancer; concerning which see what we before advanced in the history of a cancer, §. 495. But it is not uncommon for these patients, being moved by a sense of the oppressing weight in their belly, to urge their physicians to prescribe purgatives to carry off
the

the troublesome load : and if the skilful phyfician refuses their imprudent request, they often retreat to boasting pretenders, who practise with the most violent emetics and purgatives ; and then from the use of such remedies the same consequences ensue, as from the rough rubbings and irritations of an old outward schirrhus by the hands, by which it is soon made a cancer. In the present case then there is plainly no other method of cure left, but what is merely palliative, to render the malady more easily tolerable by a mitigation of its symptoms. All things therefore swallowed into the stomach ought to be so soft and free from acrimony, as to cause no pain even to the eye, when they are dropt into it : and at the same time they should be of a nature not in the least apt to turn acrid in the stomach from the heat of the body. Pure water will make one of the best drinks, or the clarified whey from new milk : and during the use of the latter, the patient should be supplied with obfobers of acids finely levigated, that if the whey sours upon the stomach, it may have its acrimony immediately weakened. The yelks of eggs which we know give no pain to a recent wound when they are spread over it, will for the same reasons be here conveniently administered in soft flesh-broths, boiled with rice or barley. But in order to weaken the sharp ichor that drains into the bowels, the most emollient clysters with anodynes are injected ; for by these, not only the offending acrimony is diluted, but the sides of the intestines are covered over and defended by the soft mucilage. Internally the like mucilaginous decoctions may be given to advantage with opiates, for quieting the severe pains ; concerning the use of which you may consult what was said at §. 202. and 229.

Trallian^m indeed seems to have observed a cancer of the bowels, with a very bad dysentery that thence followed ; for his words are, *Si intestina ulcus aut inflammatio*

^m Lib. VIII. Cap. viii. pag. 433.

inflammatio quaedam obsideat, hae notae praecedunt. Inter initia morbi cruenta, dein saniosa excernuntur: multis primo ramenta, postea pingua descendunt, & si malignus fuerit affectus, faeculenta foedi odoris: postremo ubi in cancrum jam dogeneraverit, varia excrementa, & nigra, cum quibusdam putridarum carnum particulis per alvum redduntur. Quin etiam febris cum multa siti comitatur; nec non cibi fastidium, unde corpus emarcescit: tormina quoque cum sonitu intestina exercent, dolorque ingens & vigiliae aegrum infestant:

“ If an inflammation or an ulceration takes place in
 “ the bowels, the following signs or symptoms go
 “ before. Towards the beginning or first stage of
 “ the distemper are thrown out discharges that ap-
 “ pear bloody, and afterwards filthy: in many ca-
 “ ses there is first a discharge or flux with broken
 “ skins, which is afterward followed by a more unctu-
 “ ous or laudable matter, which however is filthy,
 “ and of a most intolerable smell, when the case is
 “ malignant: but when at length the distemper has
 “ degenerated into a cancer, the excrements are va-
 “ riegated with black, and intermixed with some
 “ particles of putrid flesh discharged by stool.
 “ Moreover there is a fever attended with great
 “ thirst, and an aversion to food, from whence the
 “ body falls away: great pain with wakefulness infest
 “ the patient, and the gripes are also joined with
 “ noisy rumblings in the bowels.” This description
 sufficiently agrees with the appearances observed in
 patients afflicted with the present malady. *Peter
 Salius Diversus*ⁿ assures us he saw a cancer in the
 colon, from which the miserable patient was tor-
 mented for many months, and at last perished with
 an iliac passion.

ⁿ De Affectibus Particularibus Cap. xi. pag. 280.

S E C T. DCCCCLXXVII.

FROM what has been here advanced, it appears at length, why in practice we so often meet with pains of the gula, and mouth of the stomach, also of the liver, spleen, pancreas, intestine ileum, and colon; which are so severe, fixed, stubborn, intolerable, and incurable? From hence it also appears, that in every true volvulus or iliac passion, there is always some real or mechanical cause that absolutely hinders the passage of the contents through the tube of the intestine, in whatever manner the said cause may arise, whether in the fabric of the gut itself vitiated, or in the matters which lodge within its cavity, of which there have been various kinds found? Also, how manifold a dysentery may be, and, how very surprising its discharged matter? How unjustly, in these distempers, some particular kind of hectic acrimony in the blood is accused, for the removal of which imaginary cause, injurious medicines are often given? How much prudence or caution is required in a physician that is about to administer a purgative in great pains of these parts? What the nature is of that incurable over-purging that often follows in some patients afflicted with this malady? What a diversity of remedies and methods of healing are required to the cure of dysenteries? How vain, fraudulent, and mischievous it is to recommend any one thing as the proper remedy of fluxes? Or even to recommend one general course

course of treatment for them all? With an infinite number of the like particulars.

All who have large practice know how often there are most difficult complaints that give no less perplexity to the physician, than pain and uneasiness to the patient; and in which the trials of various methods are to no effect. It was formerly shewed at §. 797, where we treated upon a schirrhous quinsy, that when the gula is become indurated, or compressed by hard tumours surrounding, it may be gradually so far streightened, as to be at length unable to transmit either food or drink, in consequence of which the patient lingers with a starving consumption that is fatal. The most troublesome heart-burns or stomach-pains are often presented to us, inflexible to all remedies, and only capable of some relief from the use of lenients. But practical observations have taught us an infinite variety in these pains. I have visited those who found themselves easy enough with an empty stomach; but within an hour or two after a meal, they have been subject to three or four hours of miserable torment; and after this the pain has again ceased, or at least greatly abated. On the contrary, I have known other patients who have found themselves worse upon an empty stomach. I have seen women daily troubled with a very bad heart-burn, that has left them when, being with child, the gravid womb has by its distention filled the capacity of the abdomen; and has returned to them again after they were delivered. But 'tis well known, that the stomach changes its situation when it is full, and that in gravid women, the distended womb displaces most of the viscera. Now it may be queried whether such a schirrhous tumour does not less press and distract the adjacent parts, with those to which it coheres, while the weight of it is sustained by the ascending womb; and whether something of the same kind does not also happen with respect to the full

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stomach?

stomach? at least this seems to be not without a reasonable probability. But if we examine into what has been taught us by the opening of dead bodies, we often find, that schirrhous swellings and ulcerated cancers have been the causes of such stubborn and painful maladies. In the deceased body of a man, who had been for near six years troubled with a pain of the cardia or stomach, there was found a large tumour that filled a great part of the thorax, and descended along with the gula through the diaphragm, and extended itself behind the stomach even as far as the pylorus, so as to compress both the openings of the stomach: but of such a hard consistence was this tumour, that it could hardly be cut through with a knife°. In the body of a phthysical youth who had been afflicted with a considerable burning or pain above the left orifice of the stomach, inflexible to all remedies, the celebrated *Heister* p found a perforation of the gula of an inch wide, surrounded with a black or gangrenous margin, and seated at about the distance of two inches above the diaphragm. Cases of the like sort may be also seen in our history of a schirrhous §. 484. But moreover it appears from what we advanced upon inflammatory maladies of the other viscera, that in them likewise schirrhous swellings might arise: and therefore expert physicians have just grounds to suspect these stubborn cases in chronic pains of the lower belly, and to be very cautious not to exasperate the said complaints by a rough or imprudent treatment.

That in every true volvulus or iliac passion, &c.] We formerly shewed at §. 959, that *Sydenham* would have the malady called properly the iliac passion, when acrimonious humours are thrown, by the raging of a fever, into the cavity of the stomach, and continuous intestines: but if it arose from indurated fæces, or other such causes, he would then have the complaint

° Medical Essays Vol. 3. No. 26. pag. 356. p Acta Physico-Medica Academ. natur. curiosor. Tom. I. pag. 392.

complaint termed a bastard iliac passion. But from what was before alledged at §. 960, it appears, that *Hippocrates* and *Galen* intend by this name such an inflammation of the bowels or intestines, as intercepts their passage or light, by which they are unable to send on any of their contents, and therefore their definition seems more eligible to be retained. Now such a stoppage of the tube of the intestine may arise either from a tumour in the fabric, or membranes of the gut itself, or from any tumour that compresses the intestine laterally, or from any impervious matters collected within the cavity of the intestinal tube; and if under such causes a phlegmon of the bowels shall supervene, the malady is called *ileus*, or the iliac passion.

'Tis made apparent enough by what we have before advanced, that the present malady may arise from tumours of the intestines that are either inflammatory, suppurative, schirrhous, or of a cartilaginous hardness. But various matters have been likewise found blocking up the cavity of the bowels. In some persons who lead a sedentary life, and feed grossly, on aliments that are difficult to digest, more especially when there is also a weakness of the bile, such obstructing matters will be often collected in the duodenum, as that is a narrow and wrinkled gut, that there hardening by an expressure of the more fluid parts, they at length plug up the cavity or passage of the intestine, and produce an iliac passion: and of this kind was one case that came under my observation; and a like instance was before given from *Helmont* at §. 960. I observed this malady once arose in a girl, who had eat plenty of plums, and swallowed all their stones; but she happily recovered after it by discharging an incredible quantity of the said plum-stones. A like case is also to be read in *Bonetus*⁹, but with a fatal termination: for there cherry

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and

⁹ Sepulchret. five Anatom. Practic. Lib. III. Sect. XIV. Observ. 17. pag. 222.

and plum-stones that were imprudently swallowed, killed the patient after inducing the most intolerable miseries for the space of three years. A plum-stone was discharged by stool from a girl of twelve years old, covered over with a stony crust, after it had lain six years in the bowels, where it had for a long time been the cause of many complaints, and most severe colicky pains^r: now these obstacles we see arose within the bowels from things taken into the body. But even the natural mucus which lines the sides of the bowels being accumulated and thickened, may block up the cavity of the intestine, as appears from two observations of *Fernelius*, related before at §. 719. But it seems a principle confirmed by practical observations, that these obstacles lodged in the large intestines are much longer tolerable, than when they are seated in the small ones; nor in either do they cause an iliac passion, without a conjoined inflammation.

How manifold and surprising a dysentery may be ?] It was formerly declared at §. 721, that the malady is properly called a dysentery when a troublesome flux of the bowels is conjoined with griping pains, and a tenesmus or frequent motion to stool, that gives the patient no small uneasiness. Therefore all things acrimonious corroding and irritating to the bowels, whether they arise from things swallowed into them, or from humours of the body derived to them, bilious, atrabiliary, ichorous, cancerous, &c. may produce a dysentery. From whence it is sufficiently apparent, how manifold a dysentery may be in respect to the various causes that produce it. And even sometimes these causes have a surprising subtilty, and spread an invisible contagion, that infects those who are in health. It was before said at § 722, that a physician by examining into the stools of the dying patients fell ill with the same disease; and that even many persons were infected who washed the linens that were fouled by the dysenterical stools.

Whole

Whole armies are sometimes seized at once by this distemper. 'Tis true indeed that sometimes a saline cause or stimulus, vitriolic, arsenical, &c. may lie concealed in the waters and drinks; and sometimes half corrupted and frousy corn may produce the same distemper, when the soldiers are obliged to feed upon the bread that is made of it; and at other times an imprudent cramming of undressed or raw fruits has been the apparent cause: but in the mean time camp-physicians have observed, that a dysentery will sometimes spread, when the remote cause does not manifestly appear, but the nature of the infecting stimulus remains all the time unknown: and in such the powers of the body will be often immediately sunk at the first invasion of the malady, not from any copious discharge or inanition, but from the poisonous force of the infecting miasmata or effluvia of the distemper, which even stifles all the strength in persons that were but a little before in the most perfect health.

How unjustly acrimony of the blood is accused in these complaints, &c.] 'Tis well known, that in a wasting of the body from hectic fevers, much good may be expected from a milk diet with horse-riding: but if a cancerous ulcer lurks within the stomach or intestines, while the body is continually worn out by pains, the malady will in that case be exasperated by equitation. And even milk, as it is so apt to make indurated fæces, will be inconvenient in this case, although it might otherwise be lenient and useful. And if any one from observing the very putrid condition of the fæces, here shall attempt to correct them by the administration of strong acids, the painful parts will be miserably exasperated.

What caution is necessary to the use of purgatives, &c.] For, it is often the custom to accuse sharp humours or collected fæces, as if all pains of the belly arose constantly from such matters; from whence the unskilful believe, that nothing can be given more

useful than purgatives to expel the offensive matter. But if it appears, that the fore-mentioned signs of inflammation attend the said pains, it must be evident from what we have said how dangerous purgatives are, before the use of blood letting, and other suitable medicines for reducing the inflammation. But in chronical pains of the abdomen, there is also no less caution required in these respects; for they frequently arise from some schirrhous, which by irritation easily degenerates into a cancer.

What the nature is of that incurable over-purging that often follows this malady?] An hypercatharsis or over-purging is said to attend when a purgative medicine being given produces an excess of loose stools or purgings. It was indeed a custom among the ancient physicians to use the sharpest and most griping purgatives, such as hellebore, ealeterium, euphorbium, &c. from which over-purgings much oftener ensued than with us: and accordingly we meet with such cases related in the epidemics^s of *Hippocrates*; and in his aphorisms^t he observes, 'tis a fatal sign for hiccoughs and convulsions to come upon the back of an hypercatharsis; namely, because the body is soon exhausted by a too profuse and long continued purging, or flow of loose stools. But such an hypercatharsis usually happens in the present case, from a schirrhous that is ready to degenerate into a cancer, if it be irritated with purgative medicines; and then the continual drain of acrimonious or cancerous ichor, incessantly erodes and irritates the bowels to a continual flux or purging, that holds until the patient expires.

What a variety of remedies and methods are required, &c.] We a little before shewed how manifold or various dysenteries may be; from whence it also easily appears how different the methods of cure are required conformable to the various productive causes.

^s Epidem. Lib. V. Textu 13. & 29. Charter. Tom. IX. pag. 337. & 343. ^t Aphor. 4. Sect. V. & 41. Sect. VII. ibid. pag. 196. & 313.

causes. If it shall arise from half corrupted foods, those remedies that evacuate both upward and downward will be of service, provided the viscera are firm and sound; and if after the putrid humour is rejected, either by nature or art, the bowels being crude and excoriated continue to excite a troublesome tenesmus or motion to stools, the most emollient decoctions, with armenian bole-earth, sealed-earths, and the like sheathers of acrimony, will afford the most desirable effects; and this more especially when joined with opiates, which in such complaints most happily quiet the painful irritations. Sometimes the dysentery requires blood-letting, with the cooling method of cure, if it be conjoined with inflammation. But if the liver being melted into a corrupt matter, in chronical complaints, shall discharge its ichor into the bowels, a vomit given in that case, often occasions a fatal hypercatharsis. Or if the dysentery springs from the filthy ichor of a cancer in some of the viscera, there is only the emollient and mitigative method remains to do service; since purgatives exasperate the incurable malady. If a healthy person be infected with a dysentery from the effluvia or smells that proceed from persons dying of the same distemper, in which case all the powers of the body are immediately extinguished by the received miasmata, powerful helps may be then had from Rhenish wine or vinegar, either simple or medicated with the most penetrating aromatics; even by way of clyster, we have known vinegar usefully administered, when diluted with warm water: and like advantages may be also had from the use of sour whey given plentifully both as a drink, and in the form of clysters. But on the contrary, when the dysentery springs from an acid acrimony in the bowels of weak infants, the principal treatment must be with such things as absorb and weaken acid acrimony. And therefore it is plain there can be no one specific or universal remedy for all dysenteries; and it is no less apparent, that

that a true or safe method of cure can only be deducted from a knowledge of the causes, conformable to which the treatment must of course be proportionably various.



*Of the APHTHÆ; or sore eruptions
in the ALIMENTARY PASSAGES.*

S E C T. DCCCCLXXVIII.

SINCE eruptions of the internal epithelium, which we call aphthæ or thrush, appear in many acute distempers, that have inflammations of the viscera, it may be convenient for us in this place to treat briefly upon them.

The word which gives title to the present malady is indeed found in the ancient physicians, but they seem not to have always understood by it the disease upon which we here treat. They have frequently given this appellation to small ulcers, seated in the interior parts of the mouth, which often appear solitary or distinct, or at least they are but few of them assembled together; and these have a white or yellow speck in their middle, but it appears from thence red all round, inflamed and painful. If we read *Aetius's* description^u of aphthæ it will plainly appear, that by this appellation he calls such little ulcers as we have now described, which he says are both familiar to infants, and for the most part very easily curable. We often see such little ulcers are seated in the inner parts of the lips, cheeks, gums, and tongue; and they are often easily cured by only touching them with honey of roses; more especially if there be added one

^u Lib. VIII. Cap. XLII. pag. 159. versa.

one drop or two of the spirit of sea-salt, or of vitriol to each dram of the honey of roses. *Aetius* also recommends, quinces, medlars, and other astringents for the cure of aphthæ; which yet are not convenient for the cure of those aphthæ, that arise in company with acute inflammatory diseases, as will hereafter be made to appear. Moreover we see *Hippocrates* calls by this title such little ulcers of this kind as are seated in other parts of the body: for thus, says he, the wind-pipe of the lungs sometimes is afflicted with aphthæ^w, and the private parts likewise^x; and in that case he recommends a decoction of myrtle-berries in wine, or pomegranate shells boiled in wine, and the like, which are able to bind up and strengthen those moist and relaxed parts, and prevent the putrefaction in them to be feared: but sometimes he uses emollient and oily medicines to relieve the troublesome pain that sometimes attends^y. I have sometimes seen these ulcuscules in the genitals without any symptom that could give reason to suspect any thing of the venereal disease; and they have then been at first troublesome by their intolerable itching, afterwards extremely painful with a swelling of the labia, and I have found them exactly answerable to those ulcuscules, which bear the name of a thrush in the mouth, and are by the ancients described and called by the title of aphthæ. This observation is the better confirmed, because *Hippocrates*^z gives us a caution, that they are to be found from the same cause both in the mouth and in the pudenda, *Quum annus austrinus, humidus & mollis exstitisset*: “Whenever the seasons of the year turned out rainy, warm, and moist.” But although these ulcuscules are often quickly enough healed without any great apparatus from medicine, yet they sometimes degenerate suddenly

^w De morbis Lib. II. Cap. xviii. Charter. Tom. VII. pag. 570.

^x De Natura muliebri, Cap. lxi. ibid. pag. 714.

^y Ibidem Cap. lxxxv. pag. 718. Cap. xcvi. pag. 721. Et de mulier. morbis Lib. I. Cap. xxxiii. ibid. pag. 749.

^z Epidem. 3. Charter. Tom. IX. pag. 259,—261.

denly into such a putrefaction, as speedily devours the circumjacent parts, unless the incipient corruption be directly restrained by the most efficacious remedies. In the year twenty eight, I observed this malady in Holland spread itself epidemically; and if the common people neglected this thrush, as they often did, it eroded the cheeks, lips, and gums, with an intolerable foetid smell, more especially in the young persons; for in those full grown, the distemper appeared more rarely, and did not so soon eat through the circumjacent parts. At the first, there commonly appeared an hard and painful tubercle in either of the cheeks, seated about the part where the excretory duct of the parotid gland opens; this made a slight excoriation in the interior surface of the cheek, and after a few hours the excoriated part appeared covered with a sort of white crust, from whence the less knowing practitioners often imagined the swelling had an inclination to suppurate: but when they applied emollients with that view, the malady suddenly spread itself, and occasioned a great foetor of the mouth, in so much, that if the putrefaction was not directly restrained by touching it with spirit of sea-salt, the affected parts turned black, and melted in a most corrupt filth. *Aretæus*^a has very perfectly described this malady, and its various species, as we formerly shewed upon another occasion at §. 816. In like manner *Aetius*^b remarks, that they sometimes turned into spreading ulcers, and then he applied remedies that had a considerable acrimony. From hence we may understand why *Celsus*^c “ calls those by the title of spreading ulcers “ of the mouth, which the Greeks have named aphthæ;” *serpentina ulcera oris vocaverit ea, quae ἀφθας Graeci nominant*: who also in another place^d treating upon the cure of these ulcers, applauds such things as by a caustic or burning acrimony are able to form eschars

^a De causis & signis morbor. acutor. Lib. I. Cap. ix. pag. 7.

^b Lib. VIII. Cap. xlii. pag. 159. versa.

^c Lib. II. Cap.

i. pag. 46.

^d Lib. VI. Cap. xi. pag. 386, 387.

eschars upon old sores, whenever more lenient remedies were found of little service: but for this purpose he uses allum, white-vitriol, and the chalcitis, or native red-vitriol.

But it is not so very apparent whether the ancient physicians were acquainted with those aphthæ which we are presently to describe, and which make their appearance in acute maladies. *Hippocrates*^e indeed, when he describes the diseases of the several ages of mankind, pronounces, that the thrush or aphthæ are familiar to new-born infants; and the truth of the assertion is daily experienced by us in the present age, as we shall shew hereafter at §. 982. Moreover he tells us in another place^f, speaking of a suckling woman who lay ill of an acute fever: *Huic ex reliquorum incendio lingua succensa est. Sub hoc tempus lingua etiam velut densa grandine* (ὥσπερ χαλαζώδει πύκνω) *exasperabatur*: “ But in this woman was enkindled an ardent fever, “ from the redundant humours: during the time of “ which, the tongue was roughly and thick set with “ tubercles like hail.” For the term *chalaza* is by the ancients used to denote a kind of pellucid tubercles like hail-stones, filled with a ropy or viscid humour, and often met with in the eye-lids: but we know the aphthæ appear sometimes betwixt white and pellucid, somewhat like unto pearls, and then they nearly enough resemble the said grandines, or hail-stone tubercles of the eye-lids, see § 985, and therefore it seems probable, that the aphthæ attended in this patient. But the description of aphthæ given us in the Lexicon of *Julius Pollux*^g, well enough squares with the same distemper among us; for his words are; *Aphtha, exulceratio, & abscessus superficialitenu dealbans linguam, vel paristhmia, vel uvulam, vel guttur*: “ APHTHA is a superficial eruption or “ abscess, and exulceration, that appears white in the “ tongue, parts of the mouth, uvula or throat.”

Here

^e Aphor. 24. Sect. III. Charter. Tom. IX. pag. 119.

^f Epidem. 3. Textu VI. Charter. Tom. IX. pag. 314.

^g Lib. IV. Cap. 25. Sect. 200. pag. 470.

^g Lib. IV.

Here we are to observe, that this description includes both kinds of aphthæ; namely, the grandinous ulcuscules of the internal parts of the mouth, remarked by the ancients; and likewise those aphthæ, upon which we at present treat, that cover the surface of the tongue and fauces with a white crust, well known to all who have seen the distemper. But the term *abscess* is used in this description with great propriety; since as we formerly observed (§. 402.) this term was used to denote the endeavours of nature to throw off or depurate the blood from offensive humours, by depositing them upon certain parts of the body; which is a circumstance that altogether agrees with aphthæ arising in the course of a febrile distemper, as we shall hereafter shew more at large. From what has been said then, it appears to me a reasonable conclusion, that the descriptive marks of these aphthæ are to be found in the works of the ancient physicians.

S E C T. DCCCCLXXIX.

BUT these aphthæ are small, round, superficial ulcuscules, which are seated in the internal parts of the mouth.

We come now to the description of aphthæ; which appear here, in complaisance to customs, under the denomination of ulcuscules, because this denomination has usually been given to the aphthæ of the ancients: But, properly speaking, they are with us rather a sort of eruptive pustules, that arise above the surface of the internal parts of the mouth, from whence afterwards exfoliating or falling off, they leave the parts to which they adhered perfectly in their natural or sound state; whereas the aphthæ of the ancients were manifestly attended with true and hollow ulcerations, only of small dimensions. This is very well observed by *Ketelaer*, in his
treatise

treatise on this subject ^h, who in his practice of our profession among the moist regions of Zealand, has had frequent opportunities of observing these aphthæ that attend acute maladies; and although his treatise on the aphthæ be but small, it is not the less useful.

S E C T. DCCCCLXXX.

FROM a more strict examination of these aphthæ, they appear a kind of sore eruptions or ulcerations, in the final emissaries or ducts that pour out the secreted mucus and saliva into the mouth, formed by blocking up the extreme part of the duct by a humour that is thick, viscid, or unpassable, urged into it.

In our physiological lectures or institutes ⁱ, it was demonstrated, that a great quantity of thin juices are discharged through the whole internal surface of the mouth, in order to be mixed with the aliments at our meals in mastication; and at the same time that there are numberless mucous, cryptæ, or cells, in the back of the tongue, tonsils, velum of the palate, pharynx, and gula, which excrete a thick mucus for the lubrication of these parts. If we look into the mouth of a healthy person, we behold all those parts equally bedewed in all points with humidity: from whence it is justly concluded, that in every point there are like emissaries which transmit the said mucous liquid, which is also confirmed very fairly by anatomical injections. Now those eruptive, and sore protuberances, which we call aphthæ, seem to arise, when the said mucous humour being rendered thicker than ordinary, cannot be driven forward through the ultimate extremities of the said emissary ducts, but becomes there arrested, and blocks up the excretory openings into the mouth, while the force of the humour

^h Pag. 13.ⁱ H. Boerhaave Institut. Medic. §. 65.

mour urging behind, distends the ends of the vessels above the surface, and thus produces the aphthæ. A diligent inspection of the aphthæ at their first eruption, when they are here and there solitary, seems to confirm this opinion; for when they occupy these parts in confluent or thick clusters, they are not easily distinguished to be composed of single ones. But this appears still more evidently when the apthous crust falls off, and is again renewed, as is frequently observed to happen: for then by wiping or scraping the internal parts of the mouth, there appears small white points, more especially if they are viewed by a magnifying lens; and these suddenly increasing, unite one to another, as they lie contiguous, and form within a few hours a like apthous crust, resembling that which a little before separated and fell off. And it is also thence apparent, that aphthæ cannot without an impropriety be termed exulcerations.

S E C T. DCCCCLXXXI.

A Phthæ are therefore seated in all parts of the mouth, where those outlets (§. 980.) appear; and consequently they may reside either in the lips, gums, internal cheeks, tongue, palate, fauces, tonsils, uvula, gula, stomach, and small intestines, and are almost every where of the same kind.

They occupy all the parts enumerated in the text; and may therefore be easily distinguished from those sordes which sometimes incrust the tongue in acute diseases, to a considerable thickness. For it was said before, when we treated on an ardent fever (at §. 739.), that by the great heat of the distemper, all the parts are dried up, and then the extremities of the exhaling vessels become dry, parched, juiceless, and
in

in a manner dead, or withered, and are then protruded or elongated by the impulse of the humours urging behind them; and then the tongue appears fouled with a yellow crust, or covered with a filth that is of a brown or black colour. But the cause apt to generate such aphthæ has been already assigned: and in the tongue we are to observe there are numerous mucous follicles, from whence, by gently pressing or scraping the surface of the tongue, a great quantity of mucus comes forth. Moreover in our physiological lectures^k it is shewn, that the outer membrane of the tongue is extended into capsules, that are upright, and cover, include, or defend the nervous papillæ that are protuberant. But the said capsules being dried up, and dead, or withered, join together with the collected mucus, which is here thickened by febrile heat, and thus form a great part of the fordes that are observed to foul the tongue in such fevers; although the extremities of the lesser exhaling vessels, affected in like manner, also augment the said foul crust upon the tongue. For this reason the tongue has such a filthy crust only on its back or upper surface, and not at all below; and though the other parts of the mouth appear dry, yet they are not covered by any such crust. But aphthæ never cover the tongue only, without affecting likewise the other internal parts of the mouth, more or less; and sometimes they are very thick-set in the fauces (see §. 984.), when yet no signs of them appear upon the tongue: but as all the parts of the internal mouth appear to the view, we see that when the tongue is depressed, the aphthæ appear deeply set within the fauces; but then this is not enough to assure us the like aphthæ are also dispersed through the stomach and intestines, after the same manner: But when the aphthæ are withered, and begin to fall, or be cast off, we then see intire cakes or incrustations of them, are by these patients discharged in spittings; and at

the same time we observe, that perfectly the same sort of incrustations are also discharged in the stools, and in such quantities, as can by no means be supposed to come from any that are swallowed from the fauces and gula. *Ketelaer*¹ assures us he has collected such quantities of them in a few days, from the spittings and stools, as have filled several basons. But this will appear the less wonderful if we consider, that when some are fallen off, others of the same sort sprout up again in their place, and thus repeatedly for several times following. From whence it seems we may justly conclude, that aphthæ may be also seated in the stomach and intestines, as well as in the other mentioned parts.

S E C T. DCCCCLXXXII.

THE aphthæ or thrush are therefore the most familiar to the northern nations; to people who inhabit low or marshy countries, during warm and rainy seasons; and particularly to infants, and to old persons.

Certain it is, that this distemper is very rarely, or not at all to be observed in hot countries. Skilful and experienced physicians, who have led the course of their practice in such warm climates, when they have come into our northern regions have been surprised at the appearance of this malady, which they had never before seen. When I formerly practised in my country of Holland, there was no distemper offered itself more frequently to my observation, than that of aphthæ in acute maladies: but since my residence at *Vienna*, for above five years past, I have not so much as once met with the complaint. From hence it was the opinion of *Ketelaer*^m, that human bodies, being more rare and open in the warmer regions, became better disposed for perspiration and sweat,

¹ De Aphthis pag. 15.^m Ibidem pag. 30, 31.

Sweat, so as often to carry off the matter of this and other distempers by exhalation or sweat, which in bodies less apt to sweat, and in colder climates, does not so easily escape from the habit. And he affirms, that he has observed such copious sweats and urines have rendered the aphthæ more safe and mild; whereas every thing that lessened those evacuations, have proved mischievous. Perhaps it deserves also to be remarked, that in those regions where the aphthæ do not appear, the white and red miliary eruptions are frequently to be observed in the outward skin of the body. It may be then queried whether a like humour is not here deposited upon the outward skin, as that which in the case of aphthæ is dispersed thro' the surface of the various parts of the first passages? Certain we are that these miliary eruptions often attend in most kinds of acute distempers and continual fevers: and there is also a very peculiar and disagreeable smell, commonly resembling that of flat or vapid vinegar, spread through the apartment in which the patient lies; which sort of smell I have also sometimes observed in apthous patients. The white miliary pustules of the least sort appear filled with a pellucid liquor, in part projecting above the surface of the cuticle; and after the said liquid has become turbid or opaque, the contents of these pustular eruptions dry-up, scale-off, and will often be renewed again, as at first, for several times. But many like circumstances we also observe in the aphthæ; which are also preceded by anguish about the præcordia, weakness, slight and perpetual dozings, of unequal intervals, in the same manner as we often observe those same symptoms before the miliary eruption, and the decline of them after the said eruption. Sometimes the miliary eruptions disappear very suddenly with danger to the patient; and in like manner we observe the aphthæ sometimes vanish within a few hours, upon which the fever returns or rages immediately with violence, and a troublesome oppression is

perceived about the præcordia, from which there is no relief to be had, until the aphthæ come out again. But I propose these particulars as yet only under the state of a query, that those who have frequent opportunities of seeing both the aphthæ, and the miliary eruptions, may judge concerning the affinity of these two separations of the morbid matter deposited upon different parts of the body. For it must not be disowned, but there are several other symptoms that precede and accompany the miliary eruption, which yet are not to be observed in the aphthæ.

But the aphthæ occur most frequently where people are obliged to inhabit low and damp regions. From hence it is, that this malady so frequently occurs in *Zealand*, that is every way surrounded by water, and kept from an inundation by raised banks, in so much, that *Ketelaer*ⁿ calls it the endemic or popular distemper of the island; and this more especially in autumn, when there has been a hot and moist season before it.

Now although the aphthæ are to be observed in persons of all ages and sexes, yet they are the most familiar to new-born infants; and in them they are generally of a mild disposition, without being preceded by any violent malady. Even it is somewhat rare for a child in the first few weeks after its birth to escape free of this complaint: but being of so favourable a condition, their mothers seldom consult a physician in their behalf, however solicitous they may be for their health; but by the use of a little syrup of violets made with honey, joined sometimes with a little syrup of rhubarb, given to be licked by the child at convenient intervals, these apthous incrustations become softened, and are in a little time obliged to fall off: but in the continual fevers of old persons, the aphthæ very frequently arise; and, from the weakness of the patient, they often prove very dangerous.

ⁿ Ibidem pag. 32.

S E C T. DCCCCLXXXIII.

BUT when the aphthæ are about to appear in the mouth, they are usually preceded by a fever that is of the continual and putrid sort, or one intermittent that is changed to the continual kind, ushered in with a diarrhæa or dysentery, continual and great sickness at the stomach, with nausea or reachings, vomitings, and a destroyed appetite; great anguish, or oppression, that often returns, about the præcordia; great weakness, a great flux of some particular humour, with a stupidity or dulness, and sleepiness that is imperfect, interrupted or continual; and lastly, a perpetual complaint of an oppression or weight, and pain about the stomach.

We come now to consider those symptoms which usually precede an eruption of the aphthæ, and at the same time make the signs of what danger may be feared from them.

Certain it is, that if we except new-born infants, the aphthæ are seldom to be observed without a continual fever; and more especially they are frequent in autumnal fevers that are formed by a degeneration of intermittents into continuals; or else such as appearing at first with the face of a continual fever, do afterwards grow more moderate, and assume the appearances of an intermittent. I have but once had an opportunity of seeing the aphthæ in a woman of fifty, after some fits of a severe tertian; and that too was in the middle of *July*, while fevers as yet retained their vernal disposition. Our celebrated *Boerhaave*, only twice saw thick aphthæ break forth without any malady preceding; but then these were in the lips only of adult persons, and happily terminated. I had once an opportunity of visiting a girl

of a year old, who had most thick apthous incrustations, of a brown colour spread through the whole internal mouth, without any preceding distemper: but of these she was likewise happily cured, without having any conjunct fever all the time that the apthæ attended, and almost without any other uneasiness, but a difficulty of swallowing; and although the naked surface of the mouth was painful in touching the aliments when the apthous incrustations fell off, yet that likewise vanished within two days. *Ketelaer* ° who has had the care of treating such a number of apthous patients, assures us, “ That he attended a
 “ great many who were afflicted with the apthæ in
 “ a state perfectly free from all fever; and who af-
 “ firmed to him they had never perceived any fever
 “ before them, but were free from that and every
 “ other troublesome complaint:” *se plurimis adfu-*
isse, qui in summa apurexia apthhis tenerentur, quique
praesensisse se nullam febrim, ab omnique gravi mala
immunes fuisse asseverarent. And he adds likewise, that in new-born infants he had not always observed a fever go before this eruption.

But apthæ more especially follow often after those fevers that begin with a diarrhæa or dysentery, as *Sydenham* ^p has observed to us; more especially when the patients have been treated by the hot regimen, or any evacuation of the offending matter unseasonably hindered by restringents, without having removed any of the offensive contents from the bowels by purgatives. And he afterwards remarks ^q, that at the same time when dysenteries were spread epidemically, a kind of fever arose which he termed dysenterical, although it had no dysentery, because it was accompanied with all the other symptoms that had a dysentery, and had sometimes even slight gripings of the bowels: but he found, that this fever, when it was about to leave the patient, was more inclined
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° Ibidem pag. 26. ^p Sect. IV. Cap. III. pag. 223.

^q Ibidem Cap. IV. pag. 236, 237.

to produce aphthæ, than any other fever he had ever seen. And here it is to be also remarked, that the said fever had very seldom any scanty sweats; whereas the epidemical constitution of the fevers that went before, was to flow with profuse sweats. This observation of *Sydenham's* therefore seems to confirm the opinion we formerly proposed, under the preceding aphorism; namely, that the aphthæ more especially break out, when, from the peculiar disposition of the malady, or the singular constitution of the patient's body, sweats are either very sparingly, or very difficultly brought forth.

Continual and great sickness, &c.] It was before said at §. 642, that a nausea or sickness of the stomach often arose from some putrid, bilious, or glutinous filth: and that, when these symptoms arise in fevers without any signs of inflammation in the stomach, or its adjacent viscera, physicians have just grounds to suspect such a foul matter, we have before largely enough shewn. But such a matter lodged in the first passages, there further corrupted by the fever, and in part drank up by the absorbing veins of the intestines, will infect the blood with such a matter as can never be changed into the condition of our healthy humours, but must consequently be expelled thence in order to restore health. But *Ketelaer* has observed, that the aphthæ break out with more danger and mischief, when the patient neglects seasonably to call in the help of a physician in the beginning of his complaint, before the strength of the body is exhausted; for in such late calls one cannot safely make those evacuations which ought to have been administered in the beginning of the distemper.

Great anguish or oppression that often returns about the præcordia.] When we treated upon a crisis at §. 587, and as we observed at §. 619, there are often wonderful disturbances, that frequently excite

new and very troublesome symptoms, when the subdued and fluxile matter of the distemper is about to be expelled by critical evacuations from the body, or to be translated or deposited by a metastasis upon some particular part; but more especially it was observed (at §. 633.) that anxieties and restless agitations of the body usually accompany such critical commotions as we confirmed by many passages from *Hippocrates*. Now that this deposition of the matter of a distemper upon interior parts of the mouth, and alimentary passages, from whence the aphthæ arise, is such a metastasis, we are taught by a number of observations. I have often seen the aphthæ break forth upon critical days, with considerable relief to the malady which they attended; and have observed them to be much less safe, when they have appeared upon some other day of the distemper. *Ketelaer*^s who, together with the practice of physic, charged himself with the master-ship of an academy, imagined the signs of crises presenting in distempers to be so obscure and confused, that the observation of them seemed to him for no purpose or use, and therefore presumes to affirm that perfect crises, terminating distempers fully upon certain stated days of the distemper, very rarely happened in *Zealand*; and yet from a diligent and almost daily attention to the aphthæ he was obliged to confess, that imperfect crises, slowly, and gradually terminating the malady, were very frequently to be observed; among which he ranks these apthous eruptions. But in another place^t he confesses the aphthæ that arose before the seventh day of the distemper, were much more troublesome and fatal, than those which arose upon the seventh or ninth day; and that they appeared best of all in adult persons of perfect strength, after nature had grappled with the distemper, and given signs of concoction upon the seventh or ninth day, when they broke out with moderate symptoms,

in

^s Pag. 19.^t Ibidem pag. 25. & 39.

in no great abundance, especially with a cessation or great abatement of the fever : but he condemns those aphthæ which appear before the matter of the distemper is concocted. From hence then the doctrine of the ancients, concerning crises or critical days, appears to be very fairly confirmed, even from the observations of those who were diffident of this matter, provided one attends to all the appearances that follow through the whole course of the distemper. Since therefore the aphthæ are truly critical in distempers, 'tis no wonder if critical commotions, such as anguish about the præcordia, &c. go before them.

But this anxiety goes off and returns repeatedly, because when the aphthæ are come to a state of falling-off, they are often succeeded by other new ones sprouting from the same matter of the disease, not yet wholly expelled from the habit, but deposited upon the apthous parts. For sometimes the matter of the disease is so copious, or the powers of the body are so much weakened by the malady, that this critical separation by aphthæ cannot be made instantly by one effort. But *Ketelaer* ^u justly asserts those aphthæ to be of a dangerous sort, “ that by “ breaking out and disappearing again repeatedly “ fatigue or tire-out the salutary endeavours of nature by their insults :” *quæ aliquoties evanescendo repetitis ictibus & insultibus naturæ negotium faceffunt*. But what here deserves to be particularly regarded, is, that the warm, and wet, or rainy seasons, in which the aphthæ were said the most frequently to occur (§. 982.), are also by *Hippocrates* ^w observed to be often attended with diseases, *whose crises are either wholly wanting, or of a very difficult, bad sort*, ἀκρισίαι πολλαι, τὰ δὲ δύσκριτα.

We formerly observed (§. 591.), when we gave the general history of fevers, that they terminate in a three-fold manner ; namely, either in health, death,
or

^u Ibidem pag. 39.
pag. 263.

^w Epidemicor. 3 Charter. Tom. IX.

or another distemper. But it was there also said, that (§. 592.) apthous incrustations produced in the first passages by fevers, prove frequently the cause of death, in as much as they very thickly plaster up the surface of the stomach and small intestines, so as to intercept the small vessels, by which new supplies of the nourishing liquids ought to be taken up, for repairing those that are wasted. But this properly belongs to that change of a fever, by which it terminates in another distemper, by depositing the critical matter in certain vessels that are obstructed or dilated (§. 593.) as may very plainly appear from what has been hitherto advanced.

Great weakness.] Since apthæ break forth when the distemper is somewhat adult or far advanced, and since they are often observed to be preceded by diarrhæas, dysenteries, or other copious evacuations, it will not be strange if the patients are often weakened before the eruption. But our text here gives us to understand, that “pusillanimity and sinking of the “spirits,” (*refugiente animo virium præcipitatio* *) which appears more sudden and excessive than any violence or duration of the distemper, or its copious discharge, can well account for. But such a sudden weakness is observed to go more especially before such apthæ as are dangerous; in which the resolved and fluxile matter of the distemper seems to have so malignant a nature as to infringe all the powers, by vitiating the blood and spirits with which it flows through the vessels, before it can be deposited upon the surface of the alimentary passages: for when that deposition is once made, the powers usually grow stronger. Now the same sort of extreme debility is sometimes observed to attend in the petechial and miliary eruptions, no less than in the worst sort of the small-pox, before the virulent matter of those distempers is thrown out upon the surface of the body. Moreover at §. 661, where we treated of weak-

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* Ketelaer de Aphthis, pag. 37.

ness as a symptom in fevers, it was remarked, that sometimes a matter lodged about the præcordia in these diseases, stifled all the powers with a poisonous force in a moment, although no other antecedent causes went before, to which one could possibly ascribe such a great and sudden sinking of the strength and spirits; as was there proved more at large. But in the aphorism next following it will be shewn, that the worst kind of the aphthæ, that are usually fatal, ascend gradually from the œsophagus or gula, while as yet there is no appearance of them to be seen in the interior parts of the mouth: and therefore it is here highly probable, that they break out first about the cardia or mouth of the stomach, before they appear in the fauces and mouth; and therefore this may be one reason for the extreme weakness that goes before the aphthæ appear conspicuous in the mouth or fauces, when they have long before infested lower parts of the alimentary way.

A great flux or evacuation of some particular humours;] more especially of those in which the most subtle juices are exhausted from the body. For thus in the last stage of a pulmonary consumption, I have often observed the aphthæ or thrush appear, after nocturnal sweats have been for a long time endured.

Dulness, and sleepiness, &c.] *Ketelaer* y observes, that these symptoms go before the approaching aphthæ; and that it is very rarely that this sign fails; so that the nurses or attenders of the sick, in places where the thrush are familiar, immediately presage their appearance, when they observe the patient to lie thus dull and sleepy. But since the matter which forms the aphthæ is conveyed, together with the lymph, through very minute vessels, and at the same time induces such a thickness of the lymph, that it cannot pass freely through the ultimate ends of the vessels, that are thereby obstructed (see §. 980.); and

and it will be no wonder if the said offending matter, as yet lodged in the whole circulation (and not yet deposited, by metastasis, upon the surface of the alimentary passages) shall introduce such an imperviousness of the very thin lymph, as to cause this morbid lentor. But that from thence a febrile coma may arise, was shewed before at §. 704: and hereafter, such a sluggish or ropy disposition of the humours is reckoned among the causes of an apoplexy, at §. 1010, N^o. 2. γ.

A perpetual complaint of a weight and pain about the stomach] Which more especially attend in this case where the thrush infects the stomach and gula, before they appear in the mouth and fauces. Such patients often complain, that in this case they perceive a sensation, as if a hard heavy body stuck in the gula, resisting the drink that is swallowed in its descent through this tube to the stomach. I have often observed likewise an hiccough has preceded some time before the thrush were about to appear in the mouth; which seems to have been occasioned by the apthous crust, first forming itself about the upper orifice of the stomach, where it is a cause of irritation by its bulk: for in that case the same irritation is continually given, as is felt by healthy persons, who suddenly swallow too large mouth-fulls, or lumps of aliment, which slide with difficulty through the end of the œsophagus into the stomach, and usually occasion an hiccough to follow.

S E C T. DCCCCLXXXIV.

AT the beginning of this eruption, it is usual for the pustules to appear sometimes solitary, or dispersed in different parts of the mouth, more especially at first in the tongue, corners of the lips, the fauces, &c. without any certain or constant priority of their station; and

and such are almost always of a good disposition: but sometimes they appear first ascending in the bottom of the fauces, like a thick white and shining crust, springing slowly up from the gula, to which they very firmly adhere with a shining aspect, like fresh lard, or bacon-fat; and these are almost the very worst aphthæ, and for the most part certainly fatal: but sometimes the whole cavity of the mouth on every side shall be covered with such hard, thick, compact, and tough incrustations, covering every point, even to the corners of the lips; and from these the patient rarely recovers.

We come now to the enumeration of those signs from which the more or less danger of the appearing thrush is known, in order to form thence a prognosis of the consequent events. But here great care is necessary; “since the aphthæ deceive physicians in
“their approach, and when they are present, cannot
“be at all more trusted to, if we desire to draw
“thence any presage as to life or death:” *aphthæ propinquæ medicos identidem fallant, & præsentēs non meliori fide agant, si ex illis salutem vel mortem hauriri velint*^z.

The prognosis then is to be taken from the part where the aphthæ first break out, and from the various thickness of the apthous incrustations.

At the beginning it is usual, &c.] How useful it is for the physician in the cure of diseases to inspect into the mouth, tongue and fauces, was formerly declared at §. 609; but this becomes in a more especial manner necessary when the signs of the former aphorism (983.), joined with the epidemical constitution, afford reason to expect aphthæ: and if then they appear but a few, scattered here and there, 'tis a good sign that seldom deceives us. However it
sometimes

^z Ketelaer de Aphthis pag. 38.

sometimes happens, although not very often, that the aphthæ break out very scantily upon the various parts of the mouth, but are numerous and dense enough in the more interior parts: but then here, the violence of the distemper antecedent, the constant sickness and hiccoughing, with the pain and weight about the stomach, sufficiently point out to the attentive physician, that little credit is to be given to the scattered or slightly appearing aphthæ. Moreover in this case the vital powers are sometimes so far depressed, that they become insufficient to throw out the matter of the distemper upon these parts; from whence again the aphthæ may appear but few, and yet presage mischief from such a cause: but this last case is, more especially, frequent to be observed in persons of an advanced age; and in them the quick and weak pulse, without any relief to the urgent symptoms (going before the aphthæ) upon the eruption, instruct the physician that these are only fruitless efforts of nature, who is sinking under the disease, and therefore afford a fatal prognosis.

Sometimes they appear first ascending in the fauces, &c.] As in this case they arise gradually from the interior parts to the mouth, we have thence a sign that the alimentary way is filled within the body by these aphthæ; and therefore, that all those mischiefs are to be feared, which will be enumerated at §. 988. For unless a speedy exfoliation, of the said dense incrustations of the aphthæ can be procured, and unless the powers shall continue strong enough to throw out so great a quantity of the offending matter, there are no hopes left.

But sometimes the whole mouth is densely covered, &c.] Such total, hard, and thick incrustations likewise afford the worst presage: for here new aphthæ sprout up, and are cemented to the former incrustation that is held from falling off. And as none of the necessary juices can be thus detached from the subjacent vessels through so dense a crust, to the surface

face of the mouth, the whole is thus again rendered more dry, hard, and tough, and so makes a much stronger resistance to a salutary separation. Hence the patients become unable to swallow any thing; and even their tongue, lips, and cheeks, being in a manner thus rendered stiff or rigid, become unable to contain any liquids that are put into the mouth; and at length the fauces being in like manner filled, they miserably expire by suffocation.

S E C T. DCCCCCLXXXV.

THE colour of these incrustations of aphthæ is various: for either they are of a pellucid or shining white, like unto pearls; or of a simple opaque white, from the great thickness of the crust; or else flame-coloured, yellow, livid, or even black: the malignity of which colours increases in the order they are here reckoned up, so that the first is the best, and the last the worst.

The subject of the present aphorism is the diversity of the colours, from which one may deduct a presage or prognosis of the malady.

When the thrush are found scattered thinly here and there in the mouth; they always appear with a pellucid whiteness; but when a number of their incrustations are grown one to the other in a thick covering upon the interior surface of the mouth, they then form a white crust that is opaque; but if the said crust does not quickly exfoliate, it augments in thickness, and in the mean time changes colour according as the outer surface of it gradually dries and alters, so as to pass successively through the various degrees of colour, described in our text: Sometimes it happens, that the sprouting thrush appear immediately of a grey or ashen colour, and then I have almost

most constantly observed them to be fatal; which is also a circumstance affirmed by *Ketelaer*^a. As for the other diversities of colour, they seem to appear chiefly when the apthous incrustations cohere a long time to the surface before they fall off; which is always to be accounted for a bad sign, as the aphorism next following will declare: but whether the thrush ever break forth of a black colour, seems indeed to be doubtful. *Ketelaer*^b denies he has ever seen such; nor do I remember to have ever seen them thus at their first eruption: but when the incrustations have for a long time continued cohering to the mouth, I have then perceived them turn black before death, and yield a very disagreeable spectacle to the eye.

S E C T. DCCCCLXXXVI.

WHEN the thrush have continued some time, they usually relax and loosen themselves inwardly or beneath, and then exfoliate or fall off in fragments; and thus by degrees all the parts first affected are orderly cleared of the incrustations. But in point of time, they fall off sometimes sooner, sometimes later: some of them sprout up again immediately, others more slowly, and others not at all: sometimes the succeeding ones grow as thick as the former, or even to a greater thickness; from whence again the time and difference of the danger readily appears.

If the vital powers remain as yet sufficiently strong, the liquids urging the extremities of the obstructed vessels, will separate or throw off the apthous crust, more especially if the mouth be continually fomented with emollient and gently deterging liquors, as will hereafter be directed in the cure: nor can any certain space be fixed for the making of this separation; for

^a Ibidem pag. 14.^b Ibidem.

for sometimes I have known the apthous incrustations thrown off within twelve hours; and sometimes they have most firmly cohered for many days together; nor do they fall off all of them at once, but one while from this part of the mouth, and another while from that part: so that I could never observe any constant rule of their exfoliating sooner from one region of the mouth than another. However it seems highly credible, that being perpetually fomented by the natural humours, and by the swallowed liquors, in the stomach and intestines, they are there the sooner separated. If now the seats of the deciduous apthæ appear clean, red, and moist, they then either sprout no more, or at most very scantily. But if the said part or seat of the separated thrush appears dry, 'tis then justly accounted a bad sign, since they often return as thick, or even thicker than before, provided the vital powers continue strong enough to drive out the matter of the distemper; but if the patient is now become too much weakened for that expulsion, great anguish usually ensues, and unless the thrush sprout up afresh, even death itself is speedily the consequence. Sometimes the seats of the fallen thrush will appear not altogether dry, but as if covered by a very thin or white spider-webb, from which in a few hours the thrush grow up as thick as before; and then we know there is a great quantity of the matter of the distemper to be this way expelled, and that the vital powers as yet continue able to carry on the said expulsion. But this separation of the apthæ, and new reproduction of them again, is frequently repeated several times before all the matter of the distemper will be entirely expelled. *Ketelaer*^c has seen this renewal of the thrush for six, seven, or more times, which agrees also with my own observations; and sometimes there will be an interval of several days betwixt the falling, and the repullulating incrusta-

tions : but then the parts from whence the thrush fell off do not appear perfectly moist, and there are anxieties about the præcordia, together with a sleepiness, left still behind ; all which sufficiently admonish the physician, that the malady is not yet entirely subdued.

But even these deciduous aphthæ afford another variety as to their prognosis : for those which fall off the soonest, are always of the best condition, altho' they may soon after repullulate a-new, and then exfoliate again. For such denote indeed the matter of the distemper to be copious, but as yet sufficiently fluxile, while the passages or ducts also remain duly open to it, and the excretive powers hold their due strength. But when they fall off more slowly, we conclude the matter of the distemper is more tough, the vital powers less able, and the subjacent vessels less pervious ; from all which greater danger is denoted. But where there is a more considerable interval of time interposed betwixt the falling, and the sprouting crust ; we then know, that the matter of the distemper is only in part subdued, but more of it still remains to be advanced to a state of maturity, before it can be deposited upon these parts ; and therefore we foresee the malady will be tedious, or subject to many returns, with which the patient must grapple a long time before he can escape. However the falling thrush have this advantage over the rest, that they allow the patient more freely to swallow, and to take light or liquid nourishments, whereby their strength may be in the intervals recruited, and be better enabled to sustain the repeated attacks of the lingering malady. But where they sprout up again equally or more thick than at first, there is just reason to fear the powers are not strong enough to be able to make such a copious excretion, and separation of the matter of the distemper, as may suffice to restore health : and then as the incrustations dry up, without falling off, the newly sprouting
thrush

thrush join to them, and produce all the fatal mischiefs of which we treated at §. 984.

But if the internal mouth appears clean and moist after the falling of the thrush, without any anguish about the præcordia, and without leaving any dulness or sleepiness; we are then well satisfied of the patient's recovery to health, provided the fever ceaseth, or gradually abates every day.

S E C T. DCCCCLXXXVII.

H E R E then the seat of the distemper (§. 981.), the nature of the eruption (§. 979, 980.), and the causes (§. 980, and 983.) are to be considered, or compared together with the symptoms of the present malady (§. 984, to 987.) in order to ascertain the disposition or tendency of it; and from the same springs one may easily derive the consequent effects from it.

The seat of residence we have already assigned to the thrush; namely, the whole interior extent of the mouth, fauces, gula, stomach, and intestines: and it appeared also from what was advanced, that the final emissaries of the vessels, that water these parts, are obstructed with a thick unpassable humour: and the causes too, with the antecedent symptoms, have been also enumerated, together with the manner of distinguishing betwixt the less, and the more dangerous kinds of the thrush: from the knowledge or comparison of which one may grow well acquainted with the effects of the present malady.

S E C T. DCCCCLXXXVIII.

N O W when once the whole surface of the fore-described parts (§. 981.) is covered over with such an aphthous crust, the

sensibility of their nerves is intercepted by it, whereby all tasting is abolished; and the exit of the thin juices through their respective emissaries being cut off, the said parts are therefore dry, the subjacent vessels are dilated, and there follows a putrefaction of the stagnant liquids beneath, with an inflammation of the parts themselves; thence the tubular hollowness of the absorbing vessels being closed up, all entrance is denied to the fresh chyle, drinks, and medicines; in consequence of which follow all the mischiefs that can arise from a want of recruiting the bodily nourishment, and in process of time even death itself: but when the incrustations fall off, there will be a greater flow of the juices through the dilated and now opened vessels; from whence comes a salivation, or a diarrhæa, which are good signs if the apthous incrustations are not again renewed, as they are bad ones when the thrush sprout up again: the exfoliation of the apthous crust, with the painfulness of the nakedly exposed parts, often occasion them to distil or run down even with fresh vivid blood, from whence the spitting becomes bloody, and the flux or purging has the same appearance: but if all these circumstances be applied to the stomach and bowels, with their emissaries from the liver and pancreas, we may from thence learn the infinite number of mischiefs that may arise from this one malady; which therefore renders it needless for us to pursue its prognosis any further.

The mischiefs arising from the thrush are then of two kinds: either such as come from the plastering
over

over the surface of the first passages, or from the great painfulness and irritation, upon the raw or naked surface that remains after the incrustations are thrown off, for want of whose resistance the dilated and open vessels send forth too copious a flux of the juices which they contain.

From whence all tasting is abolished, &c.] It is demonstrated in physiology^d, that tasting is produced when the matter to be tasted is attenuated, and in a manner somewhat dissolved by the saliva in the warm mouth, so that being applied by the motion of the tongue and mouth, it may penetrate the pores of the capsules that cover the nervous papillæ in the surface of the tongue. But when the whole internal surface of the mouth and tongue are covered over with such an aphthous incrustation, the sapid particles can by no means penetrate to the said nervous papillæ of the tongue. And as all the salival emissaries are at the same time shut up, there must of necessity be always a dryness in these parts; and from this dryness, with incumbring incrustations, the cheeks, lips, and tongue, acquire such a stiffness or inactivity, that the unhappy patient can hardly use them to retain any liquid in his mouth, but it will directly run out again. From all which it is evident, the principal conditions required to the perception of taste are here wholly abolished.

A dilatation of the subjacent vessels, &c.] It was formerly demonstrated (at §. 120, and 382, No. 1.) that obstructed vessels are under a necessity of being enlarged or dilated; because in the obstructed vessels the greatest resistance, and the greatest fulness take place, while nothing can be transmitted through their extremities. Therefore, when all the parts mentioned are over-spread by the thrush to a considerable thickness, very troublesome swellings of the said parts ensue from the over-dilated subjacent vessels, and which are even in danger of causing suffocation when

F f 3

they

^d H. Boerhaave Institut. Med. §. 489.

they are seated about the fauces and larynx. In the gula they often block up the cavity of the tube so far, that even nothing, or but a very little of any liquid, can with the utmost difficulty gain admittance thereby into the stomach. Even, I have often seen these unhappy patients that have been several times molested with such a difficulty of swallowing, have for the future refused all kinds of drinks to avoid the sufferance of the like anguish again. If now we consider at the same time, that these obstructed vessels are turgid with such a matter of the disease, as requires to be exterminated from the body, we may easily perceive that a sudden putrefaction is to be feared in the humours that are stagnant under the incrustations, and this more especially when a violent fever urges at the same time: for then even inflammation spreads into the parts themselves obstructed, from whence the swelling still more increases; and lastly, the putrefaction will be also hastened by the increased heat that always attends inflammation.

Shuts up the hollow cavity of the absorbing vessels, &c.] It is a very just carefulness which physicians always have upon themselves in the cure of diseases, to support the life and strength of the patient by suitable foods and drinks that are easy of digestion; and although sometimes in the greatest violence of the most acute maladies, we can allow only a moist thin and spare diet that is but little nourishing; yet always something is allowed that is alimentary, while a plentiful use of thin drinks is also recommended, that too great a dryness in the body may be avoided. But all these will be swallowed to no purpose in the present malady, if the stomach and bowels are thickly covered with apthous incrustations, by which the mouths of all the absorbing vessels are so closed up, as to admit none of the juices to pass through them into the blood: but instead of refreshments, the most intolerable oppressions will ensue from the swallowed aliments, however fluid, if they can gain no free
passage

passage through the swelled bowels; or even if they should gain such a passage, they are thrown away unaltered by stools. From hence again the thickness of the humours becomes necessarily increased, no less than their acrimony, from all which the vital powers languish; and that from such causes aphthæ may terminate in death, was formerly declared in the history of fevers, at §. 592.

A greater flux of humours by the dilated vessels, when the incrustations fall off, &c.] There is still another danger that attends such patients even at the time when they are rejoiced to find the apthous incrustations are falling off; for there soon after follows a copious salivation, and discharge of a humour that is often extremely viscid; because the vessels over-dilated now separate a fluid, not only thicker in consistence, but also more abundant in quantity. If then we consider this efflux of humours, following upon the deciduous thrush, may take place throughout the whole tract of the first passages, the reason will be thence evident why a diarrhæa ensues, and why death often follows from the sudden and profuse discharge of those liquids, in weak patients, who have long languished under the troublesome malady, at a time when both patient and physicians have formed better expectations. If such an evacuation be moderate, and the patient's strength be as yet tolerably firm, this flux affords one of the best signs; because it carries off all the remains of the matter of the distemper, now easily expelled through the open and dilated vessels, so as to prevent any future returns of the aphthæ. But if the thrush sprout up again, we then know the said matter still dwells in the body, and that in such a viscid or tough condition as to be unable even to flow through the open ends of the relaxed and dilated vessels; and therefore we seldom find a patient able to grapple a-fresh with these new mischiefs, when his powers are almost exhausted by those before-going.

Painfulness of the naked and inflamed parts, uncovered by the falling aphthæ, &c.] That the living parts are inflamed under the said aphthous incrustations, was a little before declared : but when the said aphthous incrustations fall off, the subjacent parts are extremely red and painful, so that they cannot bear the least touching ; and then the miserable patients can hardly swallow any thing for the extreme painfulness of the excoriated parts, which often distil a vivid, or red blood But in the mean time, the most emollient drinks and medicines are to be used often, and in small quantities at a time, to prevent the raw and excoriated sides of the gula from growing one to the other, which would form a malady afterwards incurable. In this manner I saw, caused by an excoriation in the upper mouth of the stomach, a most troublesome hiccoughing and cardialgic pain arising from all foods and drinks that were swallowed, and which held for seven weeks, in a man of sixty years old, after the thrush were fallen. But it was very difficult to relieve this complaint, because the convulsed gula draws the stomach and diaphragm upwards, or at least, that part of the diaphragm through which the gula passes, after which the diaphragm being suddenly contracted falls downward again, from whence the painful part becomes again irritated, and hinders its consolidation.

But from comparing or applying all these particulars to the stomach, &c.] In the internal parts of the mouth we are able to see what changes follow after the fallen thrush. But certain we are, that in the more interior parts of the alimentary way the thrush also arises, and afterwards falls off again : and if now we consider, that the opening of the common duct of the bile and pancreatic juice, into the intestine duodenum, may be so stopped up by a thick aphthous crust, as to transmit neither of those important fluids ; we may thence easily apprehend what great anxieties must follow about the præcordia. But
when

when the said impeding crust is once separated, and a free way opened for the discharge of the now accumulated bile, rendered more acrid by stagnating, we need not wonder if the most severe gripes arise in the bowels, that are in a manner almost excoriated, so as to produce most dangerous diarrhæas, and dysenteries. Hence it is, that many physicians have so much condemned the use of purgatives ^e in the aphthæ, because they have observed them sometimes fatal within a few hours, by causing an over-purging, or hypercatharsis, which seems to have been the effect, not only of the purgatives, but also of the sudden torrent of collected bile, and pancreatic juice, rushing suddenly forth into the bowels, and irritating their raw or naked surface. Moreover, as a salivation often holds for several days after the thrush is fallen from the mouth, before the dilated vessels can contract to their primitive smallness; so, upon the same account, the juices which naturally distil into the stomach and intestines, frequently continue to flow in such great abundance, as to entirely exhaust the body by the purgings.

S E C T. DCCCCLXXXIX.

BUT if these ulcerous incrustations be very cohesive, thick, broad, and tough, or compact, then often the subjacent flesh inflamed, has its circulation thus suppressed or stifled, so as to change into a suppuration, a gangrene, or a dreadful ulcer, which last will sometimes eat through the palate bone, even to its upper covering: but what mischiefs may spring from the same source in the stomach and intestines, are self apparent.

When

^e Ketelaer de Aphthis pag. 45, 46.

When we treated formerly upon a gangrene (at §. 423.) it was declared, that the matter of a fever is sometimes settled or deposited upon particular parts of the body, where it exerts so great a malignity, as wholly destroys the vitality of the part where it is seated; and that even in an exceeding little time, as we there proved more at large. Now the aphthæ arise from the matter of a fever, thrown towards the surface of the alimentary passages; and that it there sometimes proves very mischievous or malignant in the worst sort of thrush, plainly appears from what we have before said. Even the aphthæ that are more slight, and of a milder disposition, may be well esteemed a kind of superficial gangrenes: since here the ends of the vessels, stuffed with the viscid humour, form together a dead crust, that requires to be separated, and cast off from the subjacent living parts. The matter therefore of the fever being deposited or settled on these parts, and the extreme openings of the said vessels being stopped up, destroys their vitality, and thereby truly imparts to the aphthæ, the nature of a gangrene. But it was formerly remarked at §. 442, that if gangrenous parts dry-up so as to form an hard eschar or scab; the subjacent living vessels are in that case compressed by the said eschar, and being struck by the vital circulation increased with a fever against its resisting surface, a new inflammation arises beneath the dead eschar, and soon turns likewise into a gangrene; and in this manner the thickness of the incumbent crust of the gangrene is continually increased, until the parts are all dead even down to the bones.

The like danger is to be feared, also when the apthous incrustations do not speedily fall off; for then one new crust sprouts up and coheres with the former above, as was said at §. 984, and thus causing a greater compressure on the subjacent living parts, it spreads the malady. If such thick and firmly cohering incrustations remove not from the
arched

arched palate or roof of the mouth, the membranes which cloathe this part are destroyed, so that when the gangrenous incrustations afterwards separate, the palate bone appears naked, turns foul or carious, and occasions the most troublesome mischiefs. If now we consider, that the same sort of mischiefs, which here appear to the naked eye within the mouth, may likewise take place in the stomach and intestines, we may be thence able to understand how many, and how great mischiefs may arise from the aphthæ; more especially if we herewith compare what was formerly said upon an inflammation of the stomach and intestines.

S E C T. DCCCCXC.

THE best method of treating this malady for a cure requires, 1. To raise the strength or impulse of the vital circulation within the parts that are distressed by the aphthæ, and to temperate the sharpness of the vital humours, that by importing a due quantity of fluid moisture beneath the ulcerous incrustations, they may relax, separate, and fall off: and this intention is answered by plenty of warm, diluent drinks, that are resolving and absterfive. And because in the worst sorts of this malady the lacteals, being incrusted or plastered over, deny the ready entrance to the chyle or drinks, therefore outward fomentations, vapours, and bathings with the like liquors, will be wonderfully of service; but the best aliment will be afforded by a decoction of bread in water, with which is mixed some wine and honey, at the time of taking: 2. The incrustations must next be disposed to an easy and speedy separation; and this is procured by fomentations, gargles, and clysters,

sters, which ought to consist of warm, relaxing, emollient, and deterfive liquors, which resist putrefaction, and adhere a long time to the parts to be moistened: 3. So soon as a separation of the incrustations is once procured, immediately such medicines, in the like forms, are to be used, as are anodyne, healing and corroborating: 4. And again, when the fever is once quelled, the urine charged with a sediment, and the pulse become somewhat more free and easy, a drink that is merely corroborant will then be of service. 5. Lastly, in the end of the distemper, a corroborant purgative may be administered to clear the bowels.

The whole history of the thrush, that has been hitherto proposed, informs us, that a morbific matter is here extricated from the rest of the humours, and deposited on the alimentary way; and therefore in the cure, a precaution must be taken to do nothing that may hinder or oppose this effort of nature: but on the contrary, to make use of every thing that can promote the expulsion of the morbid matter. And this is the more carefully to be remarked, because many of the less skilful have confounded the ulcerative thrush of the ancients (for the cure of which restraining were commended) together with the present aphthæ that follow acute distempers; and in consequence of this, they have attempted the cure by coolers and astringents, to the great damage of the patient. For the truth of this pernicious error in the practice of physic (as *Ketelaer*^f has well expressed himself in its reprehension) “ appears hence, that
 “ just as much oppression and anguish is thrown up-
 “ on the heart and vital organs, as is proportionable
 “ to the space and relaxation imparted to the mouth
 “ and fauces, by such coolers:” *Constat, quantum*
ori

^f De Aphthis pag. 49.

eri ac faucibus per frigida illa spatii ac laxitatis, tantum cordi & vitalibus angustiae, anxietatisque parari. For so soon as ever the eruption of the thrush is checked, the fever directly increases, the anguish becomes extreme, and many other mischievous symptoms ensue, that are not to be relieved until the thrush shall again break forth. The productive matter therefore of the aphthæ requires to be rendered fluxile or moveable; and the vessels must be disposed to give it an easy passage outward. The former of these indications may be obtained by moderating the fever, in such a manner as to be neither excessive, nor too sluggish. But we have already, in our history of fevers (§. 609, 610, and 611.) treated upon the signs for distinguishing these bounds, and upon the manner of reducing the too great violence, or of exciting the over sluggishness, of the fever. To the same purpose will also conduce a very plentiful use of diluent, attenuant, and deterfive liquors; for by these, both the tenacity of the morbid matter will be thinned, and the vessels will be relaxed, so as to yield it a more easy passage through them. The form of such a decoction is given in our author's *Materia medica*, at the number of the present aphorism, composed of parsnep-roots, chich-roots, China root, &c. to be always drank warm. But if all the surface of the first passages be so lined with apthous incrustations, that nothing can be swallowed, or if nothing of what is swallowed can be absorbed by the bibulous veins, there is then no way left, but to endeavour to introduce as much as one can of the like liquors through the pores, in the outward surface of the body; for which the most convenient forms will be those of baths and fomentations, made of the like materials. Milk diluted with twice as much water has been of considerable advantage in this case, by immersing the feet and hands alternately in the heated mixture. The like liquors are also injected as clysters, in hopes that if the larger intestines are not plastered with so thick

thick incrustations, they may here be absorbed, and sent in to mix with the blood.

But the nourishment or diet must here be liquid, or thin and light, that it may the better be able to penetrate wherever the bibulous veins are as yet not wholly obstructed. For this reason a decoction of bread is recommended, as it affords the best nourishment, and is wholly averse to all putrefaction; a small portion of honey is also added, that by its saponaceous and absterfive property, it may scour or cleanse the incrustations, and dispose them sooner to fall off; and thus at the same time it may also procure a passage for the aliment to be absorbed. But wine is likewise intermixed here, because it has a wonderful penetrability, by which it enters the bibulous veins, and in a manner opens a way for the nutritious parts of the bread to be received. For if a healthy person does but retain an ounce of fresh wine in his mouth for the space of a single minute, if it be then turned out of his mouth, he will be surprised to find it already vapid, or spiritless, the most subtle and fragrant parts of it being in that short interval, sucked up by the inhaling veins of the mouth: even more, he will by frequent repetitions, in this manner become at length fuddled, although he drinks or swallows not a drop of the wine. In this drink therefore, a soft nourishment will be supplied to the body for recruiting the vital powers that now languish, and they will be also roused by such a friendly and moderate stimulus, as may enable them the more easily to throw out the morbid matter. *Ketelaer* § found by experience the usefulness of the like thin and vinous nourishment, to be such in this malady, that he pronounces, “ the caudles of childbed-women, “ prepared of Rhenish-wine, eggs, cinnamon, sugar, “ and saffron, to be alone often sufficient to answer “ all the intentions; and if it was not so apt to increase the great heat and drought, it might be “ reckoned

“reckoned the capital of all medicines for promoting the eruption of the thrush:” *Ille potus puerperarum, ex vino rhenano, ovis, cinamomo, saccharo & croco confectus, saepe omnibus intentionibus solus satisfacit, & nisi calidior sitim, siccitatemque adaugeret, omnium, quae promovendis aphthis sunt, magnum instar foret.* But if those spices are omitted, or are but very sparingly used in the wine that is well diluted by the decoction of bread, nothing of that kind need then to be feared; more especially if the quantity of the wine is proportioned by the order of a prudent physician, to be increased or diminished as the more or less violence of the fever may require.

2.] By those things which are recommended in the preceding number of this section, the powers of the body are upheld, a diluent vehicle is supplied to the blood, and its motion circulatory is moderately raised when too sluggish, that the vital fluids better urging against the extremities of the obstructed vessels, may move the obstructing resistances, and procure an open passage through those canals, by which the matter of the thrush is to be driven out. But these aphthous incrustations are sometimes of a more considerable thickness, and growing dry, they so firmly cohere with the whole surface of the first passages, that the mere impulse of the fluids urging behind, is not sufficient to make them separate and fall off. In that case then it will be very useful to soften, macerate, or relax, and in a manner melt or dissolve the aphthous crust, that its more weak cohesion may allow it to separate with a slight force. Therefore all watery drinks warmed will answer to this purpose, if they are prepared from emollient and meally substances; for these give the drinks a power of sticking longer upon the parts, while mere or simple water runs off from them immediately. To such drinks it has been also usual to add ingredients that have a soapy and scouring force, which still better loosen and forward the separation of the aphthous incrustations, while

while by a gentle stimulus they irritate the subjacent living parts, and invite them to throw out humours that may also moisten and relax the incrustations after the same manner inwardly, or in their lower surface. Thus decoctions of turneps, or turnep-radishes, or rather their expressed juice slightly boiled, and sweetened with honey, will afford a remedy approved by long experience in those parts where the aphthæ are the most popular and frequent^h; but in defect of this, when turnep-roots are not to be had, the common people make use of small beer or ale sweetened with sugar. If the turneps are grated upon the rasp with their rinds upon them, their expressed juice will then be proportionably more sharp and scouring. Veal broths likewise boiled with rice, and bruised turnep-radishes, will be very serviceable for continual fomenting and gargling the mouth; and slowly swallowed will be of the like use to the interior parts of the stomach and bowels thus affected, and will at the same time yield a good nourishment to the body: and for the same reasons the like liquors may be also injected as clysters. More forms of the like remedies may be seen in the *Materia medica* corresponding to this and the foregoing number of the present aphorism; for you have there the form of an emulsion, a decoction, and an expressed juice. The ingredients left after the preparation of such decoctions are commonly applied to the neck in form of a cataplasm, that all the surrounding parts may yield, and less resist, or distress those within.

It deserves here to be remarked, that Sydenhamⁱ, treating upon a thrush that followed after an epidemical fever, recommends the use of the Peruvian bark, and strenuously affirms this medicine to be more effectual for procuring a separation, than any other he knew. The bark he therefore gave when the thrush tended not to a spontaneous separation, but

^h Ibidem pag. 50.
ingressu pag. 656.

ⁱ In *Schedula Monitoria* de novae febris

but held on to a great extent of time. But the said fever, although continual, most subject to most troublesome fits of increase towards night, as if it had been a double tertian, or quotidian^k. From whence it appears, this fever was of the remitting kind, which like those of intermittents are disposed to be removed or carried off by the bark: Whence it seems probable, that *Sydenham* first gave the bark for the quelling the fever in these patients; and then observed at the same time, that the aphthous incrustations happily separated. But since autumnal epidemic fevers often resemble those that are continual, although they sufficiently declare their nature by the fits of increase that return at stated intervals; and finding that when the violence of the fever is gone off, they afterwards change into true intermittents, I was thence encouraged myself to give sometimes a decoction of the bark to quell the fever in the weaker sort of aphthous patients, where the incrustations inclined to grow very thick; and in a decoction, because when there is a thrush in the fauces, the bark itself is not easily to be swallowed in substance: however I was under some apprehensions, lest the astringency of the bark might indurate the thrush; only considering, that of two evils it was most eligible to take the least, I persevered, and interposed a constant use of emollient decoctions, to correct any harm that might be feared to ensue from the cortex. After I had entered upon this practice, it surprised me to find, that the aphthous incrustations fell off sooner in those patients who had taken the bark, than in those whose greater strength and more moderation of the fever, called not for the use of it; and it made me no less wonder at *Sydenham*'s sagacity in the treatment of diseases. At that time I was not yet acquainted with the excellent virtues of the bark, in separating gangrenous or mortified parts; but now it appears to me, that the said happy effects of the bark in separating

parating the apthous incrustations, very well confirms what was said under the foregoing section, in respect to the apthous incrustations being of a gangrenous nature. And from hence it may probably be of use to make a cautious tryal what the bark will effect in those eruptions, that often appear in countries where the thrush seldom or never appear with fevers. I have known this practice successful in some instances; but have not yet been able to collect tryals enough in practice, to make a positive determination in the matter.

3.] When the thrush fall off, the parts then appear raw or excoriated; and if the incrustations of the thrush prove of considerable thickness, they are likewise extremely painful, as was declared more at large at §. 988. Now these raw parts are irritated even by honey, and much more would they be irritated by the juice of turneps, and turnep-radishes; and therefore only the most healing emollients may be here used, which not only ease and defend the painful parts, but also serve to relax and loosen by adhering longer to such apthæ as are not yet deciduous. The drink, which is described in the *Materia medica*, at the number which corresponds to the first of the present section, will in this case be of good service; as will be also the mixture that appears under the third number in the same place, composed of new cream, yolks of eggs, and syrup of white poppy-heads. This will very fairly relieve the painfulness of the excoriated parts, and at the same time moderate the too great effusion of the thin juices that now copiously flow through the dilated and opened vessels under the thrush; to which purpose the syrup of the poppy-heads greatly conduces, as we observe in daily practice, that it also kindly checks other excessive discharges of the humours. I have sometimes seen so great a quantity of the salival juices expelled, through the glandular outlets that open under the falling thrush, as hath made it necessary to order the patients

patients to swallow it, lest they should be suddenly exhausted by the profusion of liquids. But when once the pain begins to abate, mild corroborants, or restringents, may then be used to cause a gradual contraction of the over-dilated vessels. Here then a decoction of the leaves of agrimony, with honey of roses, as it stands recommended in the *Materia medica*, will be of considerable benefit.

4.] But when there is danger, from the thrush falling suddenly and entirely off, lest the open and dilated vessels should make too profuse a discharge, and excite a diarrhæa or flux that would soon weaken and exhaust; corroborants must then be called in to our assistance. But if the said vessels are too soon bound up, before the matter of the distemper be all expelled, fresh danger would arise from a return of the malady, when the patient is now in the most weak condition. Therefore it behoves the physician to be first satisfied in this point, before he ventures upon the use of those astringents or corroborants; and this more especially since it was observed at §. 986, that the space of some days are often interposed betwixt the falling and the sprouting thrush. Let us then here review the signs by whose appearance we may be safely directed to such a use of corroborants. Now as long as any remains of the apthous matter continue in the body not yet expelled, there is a fever that stays behind, which is often accompanied with some degree of a returning anguish or oppression (§. 983.); the pulse too is observed weak, and the patient languishing or low spirited. But when once the whole matter of the disease is expelled, the pulse always rises to a greater strength, and the patient becomes better able to support the malady. But an hypostasis or sediment in the urine will still better confirm, that the matter of the distemper is concocted and subdued, as is declared in our great author's *Pathology*¹; and in the former parts of this work, that give the

¹ H. Boerhaave Instit. Medic. §. 1016, 1017.

history of fevers, we explained this more at large under the heads of concoction and crises. A form of such a corroborant medicine may be seen in the *Materia medica*, at the present number of this section.

5.] It was formerly intimated (at §. 988.) that purgatives agree not with the thrush, but often produce the most dangerous over-purgings : but here, in the close of the distemper, a purgative is advised to carry off by stool the remains of the apthous incrustations that have fallen from the stomach and intestines, lest being there too long retained, they might corrupt and produce new mischiefs. But then only such purgatives are here commended as have a manifestly restraining and corroborating power ; such as rhubarb, myrobalans, and the like, which from that property have gained so much reputation in the cure of diarrhæas and dysenteries ; because by a kindly stimulus, they purge out the irritating acrid, and at the same time confirm the over-loose vessels by their restraining power. Such a form of medicine is given in the *Materia medica*, at the present number of this section ; where however, by an error of the press as it would seem, the dose is expressed much too large, even to the quantity of an ounce and half ; whereas a dram and half suffices for the present indication.

S E C T. DCCCCXCI.

FROM the history and treatment of the apthæ, that have been now given, many difficult questions and obscurities in practice, may be explained or answered. As why the thrush appears in the end of a fever, joined with a diarrhæa, or a dysentery ? Why the thrush are so familiar with a flux to children, and to old persons ? Why those symptoms more especially attend under a heating regimen, with like medicines and diet, or when astringents

gents are used in the beginning of the thrush? Why, in the beginning of such a fever, the exhibition of a purgative will often prevent those aphthæ? Why most troublesome and fatal hiccoughs attend the worst kinds of the thrush? Why aphthous ulcerations of the mouth, fluxes of the bowels, and abolished appetite, are reckoned together by *Hippocrates*? Why an aphthous incrustation upon the coats of the stomach creates a lientery? Why the black sort of the thrush are accounted pestilential? Why febrile aphthæ of the mouth, in women with child, presage abortion? Why aphthæ attend putrefactions of the liver, lungs, &c.? Why a tumour, heat, suffocation, and quinsy of the throat, follow when the aphthæ are chilled or refrigerated? And why a delirium, watchings, restless tossings, and cold sweats, make signs so fatal in this malady?

As it was our method, in closing the histories of the distempers hitherto considered, to subjoin some practical deductions, explainable from what was advanced before them, therefore this chapter we close after the same manner.

Why in the end of a fever, &c.] This is what has been confirmed by the observations of *Sydenham*, as we formerly related at §. 983. But the chief reason seems to be, that the most fluid parts of the humours being exhausted by the profuse evacuations, the more viscid juices that remain are more disposed to deposit their tenacity upon the final vessels in the interior surfaces of these parts, and there form a thrush; but more especially the particular disposition of the malady (hardly to be explained by a knowledge of the causes, and almost only to be learned by faithful observations) is the principal reason why its matter so

generally settles upon these parts. For *Sydenham*^m confesses, that in a dysenterical fever, (so called by him, because it was joined by all the symptoms of an epidemic dysentery, that was then common, except the flux or purging itself with what depends on it) he yet found a greater inclination to produce the thrush, than he had ever before observed in any other fever. Now in that fever the origin of the thrush could not be derived from profuse discharges of the more fluid humours by stool, but they must have been the result of the nature peculiar to the distemper itself.

Why more especially in children and old persons, &c.] This is what we formerly remarked at §. 982; and *Hippocrates*ⁿ also, in reckoning up the principal diseases that accompany the several ages of mankind, observes, that the thrush oftener happens to new-born, and little infants. But we observe plainly, that a great quantity of a tough mucus or phlegm, lies usually collected together in the first passages of new-born children, which they either reject by vomitings, or expel in loose stools: and therefore we are thus assured a great deal of tough phlegm drains in these from the ends of the distilling vessels, within whose extremities, if it be arrested, it may form apthous incrustations, but generally of the milder sort, and quickly exfoliating: and when, after this, the said vessels over-dilated make a very copious deposition or evacuation from the blood of the like viscid humour, the children have then a purging by loose stools, which may continue to good purpose, until the morbid matter is expelled. *Ketelaer*^o has expressed his surprise at observing, that children will lie, with so little attendance, and sustain even with strength and chearfulness, the apthæ with purgings for many days and nights together; while in adults, the use of purging is so highly to be distrusted: and therefore

^m Sect. IV. Cap. iv pag. 236, 237.
III. Charter. Tom. IX. pag. 119.

ⁿ Aphor. 24. Sect.
^o De Aphthis pag. 47.

therefore he observes, these are not so much “ imitable courses of nature, as they are extraordinary exceptions :” *haec non tam exempla, quam monstra esse*. But the reason of this appears plainly enough from what we have here said.

But in old persons, who are invaded with acute distempers, the vital powers are much weakened in their decaying bodies, and being less active, they require a longer time to concoct and subdue the matter of a distemper; and the critical discharges and transmutations are in such made much more slowly, and by interrupted or repeated efforts of languishing nature, while the same is more impetuously made altogether by one continued endeavour, in those of a robust age. But an eruption of the thrush, as we formerly observed, generally exterminates the matter of the disease by such interrupted or repeated efforts, or sproutings: and as in old age all the humours more abound with a sluggish lentor, therefore their alimentary passages are more loaded with a clogging phlegm, while their outward skin appears dry, shrivelled, and juiceless. Hence therefore we have another reason why the thrush are often seen in old persons, and are then so commonly dangerous, as we remarked formerly at §. 982.

Why more especially under a heating regimen, medicines, &c.] This is an observation of Sydenham's, as we formerly mentioned at §. 983: for when by a heating regimen with the like medicines, the more fluid and moveable parts of the humours are dissipated from the body, the remaining juices become less fluxile, and are apt to arrest and dry-up in the extreme openings of the vessels; both which greatly conduce to the production of aphthæ, when the natural genius of the distemper also promotes the said eruption. But astringents will also have the same effects, as they shorten or draw together the solids, and thicken the fluids; but this more especially, if such are imprudently given in the beginning of the distem-

per, or where there is a diarrhæa, or a dysentery, and the matter of the disease not yet carried off from the body.

Why in the beginning of such a fever, a purgative prevents, &c.] Because this will very often expel the stimulating acrimony, that is both the cause of the dysentery, and of the conjunct or consequent fever. Even *Sydenham*^p was often obliged to repeat his purgatives to exterminate wholly such a fomes or matter of the distemper. But by this practice he prevented the epidemical, or other matter of the distemper, whether by its long stay in the body, or by the long continuance of the fever, from so altering the humours as would make it afterwards necessary for them to produce such an aphthous despumation.

Why most troublesome and fatal hiccoughs attend the worst kinds of the thrush?] There are two stages of the thrush which are liable to hiccoughs; either in the beginning of their eruption, when the aphthous matter breaks out copiously about the upper orifice of the stomach, even before they appear in the mouth or fauces, so as to cause an irritation upon the stomach and diaphragm, as we formerly shewed at the end of §. 983: or else there is frequently an hiccoughing attends in the termination of the distemper, when the aphthæ are falling off, and when the said cardia, or upper opening of the stomach, and its interior surface, are in a manner excoriated and painfully irritated by every thing swallowed into the body, as we intimated before at §. 988. But the hiccoughing observed in the beginning of the thrush is of a worse presage, as it denotes the interior surface to be infested with very thick aphthæ, which thence gradually ascending up the gula, at length fill the whole extent of the fauces, where they are observed to be of the worst disposition, and commonly fatal: Whereas the hiccough, that attends the falling off of the thrush, is indeed troublesome, but rarely mischievous

chievous or fatal. This is also confirmed by Sydenham⁴; namely, that such an hiccoughing will remain for several days after the fever is removed, and which goes away spontaneously, as the patient recovers strength. But he diligently inculcates to physicians, “that the patient is in no danger from an hiccough, “at the close of this aphthous fever, unless he be “over-officiously crammed with too many useless “medicines; and in that case death may stand in “stead of the doctor:” *ex singultu, sub finem hujus febris (aphthosae nempe) accedente, nihil aegro periculi sit, nisi officiose nimis & inutiliter multa ingerantur remedia: quod si fiat, mors pro medico est.* For it is only necessary, that the lightest and most emollient nourishments be here given, to avoid irritating the raw or painful parts; for by these they soon heal or cicatrise, and then the hiccoughing ceases. But where the physician without reason suspects, that offensive humours are lodged about these parts, and then attempts their removal by vomits or purgatives, the stomach often becomes inflamed by such treatment, with the utmost danger to the patient.

Why aphthous ulcerations of the mouth, fluxes of the bowels, and abolished appetite, are conjoined together by *Hippocrates*?] From what we proposed at §. 978, it appears very probable, that the ancient physicians were acquainted with the febrile thrush, that is observed by the moderns to attend or follow many acute maladies; even though they have given the same denomination of aphthæ to a kind of little ulcerations, that widely differ from the aphthæ which we here describe. But from the whole history of the thrush hitherto related, it plainly appears no wonder if the bowels become dysenterical or disturbed, and the appetite abolished, since those incrustations plaster up the whole tract of the first passages; and therefore these might very well be reckoned together by *Hippocrates*. It does not however plainly appear, that

⁴ In schedula Monitoria de novae febris ingressu pag. 656.

that *Hippocrates* * would intimate to us by this passage, that the disturbance or dysentery of the bowels, and destroyed appetite, are to be considered as effects consequent from those aphthæ. For he there relates the epidemical constitution which follows a warm, moist, and wet season of the year, in which, among the other maladies that he observed rise, he reckons up
 “ the thrush, or sore mouth, and the like eruptions
 “ or tubercles in the genitals, sore or inflamed eyes,
 “ red blotches of the skin, fluxes of the bowels, and
 “ loathings of the food :” *Ora aphthosa, pudendorum tubercula, ophthalmias, anthraces, alvos perturbatos, ciborum fastidia.* Since then it appears in the text, that these are not immediately joined one to the other ; but that three very distinct diseases are reckoned, before he mentions the disturbance of the bowels, and the loathings of the food ; it therefore appears, that in this passage he only reckons up a mere succession of the principal maladies that were then popular, rather than to intimate the two last were any consequences of the thrush.

Why an aphthous incrustation of the coats of the stomach creates a lenteria ?] It was proposed formerly (§. 719.) as a definition of the lenteria, “ that it
 “ is such a polish or smoothness of the intestines, as
 “ renders them able to retain nothing that is swallowed into them ; but directly lets all things taken
 “ flow indigested through them : *laevitas intestinorum, qua continere nihil possunt, & quidquid assumptum est, inconfectum protinus reddunt.* For it is peculiar to this malady, that the nourishments are let through the body unaltered. But it is demonstrated in physiology, that a change or digestion of the aliments requires not only a proper force of action from the stomach and intestines, but likewise a due proportion of the indigenous, or salival, and bilious fluids, to be slowly incorporated with the ingested nourishments. Now this intimate commixture is wanting

* Epidemicor. Lib. III. Charter. Tom. IX. pag. 261.

ing when the stomach and bowels are incruſted with thick apthæ, while for the ſame reaſon none of the juices are obſorbed by the lacteal and meſenterical veins; and therefore, as there is here nothing added to the nourishments in the bowels, ſo neither is any thing taken from them, and of courſe they flow thence unaltered. But when thoſe apthous incruſtations fall from the ſtomach and inteſtines, then there is ſo great a flux enſues from the now open and over-dilated mouths of the veſſels (ſee §. 988.), that all the ingeſted nourishments are in a little ſpace of time waſhed away by them in the ſtools, with little or no alteration made in them.

Why the black thruſh are accounted peſtilential?]
If the thruſh appear of this colour at their firſt eruption, they are a ſign the matter of the diſeaſe, this way exterminated, is of ſo malignant a nature, as immediately turns the ends of the retaining veſſels gangrenous. But if, as is more generally the caſe, the new thruſh ſprout up, without the old ones falling off, and they all join together into thick incruſtations; in that caſe the outer ſurface often dries and turns black, and the ſubjacent living veſſels being ſuffocated by the incumbent cruſt, a gangrene invades the affected parts. The fatal termination therefore of both theſe malignant apthæ appears ſufficiently plain.

Why apthæ of the mouth, in women with child, preſage abortion?]
For we have ſeen, that they hinder the due preparation of the aliments, and abſorption of the chyle; and therefore, as the gravid mother requires nourishment to ſuſtain two bodies at the ſame time^s, the want of chyle will be ſoon deſtructive to the foetus, more eſpecially as it muſt have ſuffered conſiderably already from the mother's humours being vitiated by the preceding diſtemper, and changed much from the healthy ſtate they ought naturally to have. But how great theſe changes are in the humours

^s Celf. Lib. II. Cap. x. pag. 78.

mours may appear from the complaints themselves, that usually precede the thrush, and which were enumerated at §. 983. *Hippocrates*^t tells us, “ that a
 “ thrush of the mouth brings a flux of the bowels to
 “ women with child :” *Ora aphthosa uterum gerentibus alvos humentant*. In another place^u he condemns indeed the thrush in gravid women, but proposes the flux or looseness of their bowels more doubtfully : for his words are, *Ora aphthosa uterum gerentibus non sunt bona. Num & alvi humentantur ?* “ The thrush
 “ of the mouth are bad in women with child : for
 “ may they not bring a flux ?” But then he pronounces in his aphorism^w, “ that if a woman is big with
 “ child, she goes in danger of miscarrying by a copious or frequent purging :” *Mulieri utero gerenti, si alvus multoties profluat, abortus periculum est*. Since therefore, for reasons above mentioned, a flux or purging of the bowels is to be feared from the thrush, it appears from thence plainly enough why the thrush, in gravid women, presage miscarriage. *Foefius*^x indeed doubts whether *Hippocrates*, in those places of his coan presages does not intend the thrush in the mouth of the uterus ; since, in another place, he asserts the thrush also invade the genitals, as was observed by us under §. 978. But the mouth of the womb lies higher up, than to shew any thrush to ones observation in the gravid mother ; nor can one thence understand, why they should be also followed with a flux or purging to be feared, the reason of which appears intelligible enough, when the mouth or alimentary way becomes infested by the thrush in gravid women. He has besides another most remarkable passage^y to this purpose : *Uterum jam gestantibus aphthosae fluxiones dolentes, malum. Haemorrhoids his, pessimum* : “ Fluxes that are apthous and painful, are a
 “ mis-

^t Coacar. Praenot. No. 544. Charter. Tom. VIII. pag. 884.

^u Coacar. Praenot. No. 514. Ibidem pag. 882.

Aphor. 34. Charter. Tom. IX. pag. 214.

^w Sect. V. ^x Hippocrat. Oper. Tom. I. pag. 202.

^y Coac. Praenot. No. 529. Charter. Tom. VIII. pag. 883.

“ mischievous sign, in women gone with child. But
 “ a bloody-flux is the most fatal to them.” Where
 we are to observe, that he treats not of the thrush of
 the mouth barely, as in the former quotations; but
 only pronounces it an aphthous flux, or purging of
 the bowels, which is at the same time painful. How-
 ever it must be allowed, that the thrush in the genitals
 are often extremely painful, as was remarked at §.
 978: and if we consider, that such a painful irritation
 from them about the genitals may easily bring on the
 birth-pains, by which the foetus will be brought to
 light before the term of its delivery; the reason will
 be evident enough, why *Hippocrates* should also con-
 demn the little ulcerations or thrush that invade the
 genitals of gravid women. This is the more con-
 firmed, because in the same presage he condemns a
 conjunct bloody-flux with it as the most fatal sign;
 for that usually produces a tenesmus, or repeated en-
 deavour to empty the bowels of the abdomen. But
 the labour-pains resemble those of a tenesmus in its
 most violent degrees, especially in the final throws,
 by which the infant is brought into the world. If
 then the genitals be irritated by the ulcerations, and
 the rectum excited to a tenesmus by the swelling piles,
 it will be no wonder if such uneasy throws are produ-
 ced by them, as must excite the stronger pains of de-
 livery, and procure a miscarriage: which *Hippocrates*²
 tells us is even to be feared from a tenesmus only:
 viz. *Mulieri utero gerenti si tenesmus oboriatur, abor-*
tum efficit: “ A tenesmus coming upon a woman gone
 “ with child, brings upon her a miscarriage.”

What has been here said likewise renders our for-
 mer opinion still more probable, namely, that the an-
 cient physicians were acquainted with both kinds of
 the aphthæ or thrush: for the former coan presages
 seem to relate to the thrush that invade the mouth
 and first passages; and the latter of those presages to
 the other kind, or ulcerating thrush, that not only
 invades

² Aphor. 27. Sect. VII. Charter. Tom. IX. pag. 304.

invades the mouth, but the other parts of the body, likewise with true ulcerations, as we shewed at §. 978. I know indeed, that *Duretus*, whom I respect as one of the best commentators on *Hippocrates*, expounds this last coan presage in a different manner, making the *apthous flux* the same with a *thrush of the mouth*, which I think is plainly enough confuted by what we have above advanced. Besides in this construction *Duretus*^a must be obliged to give such a meaning to the words of *Hippocrates*, as will no where agree with the rest of his works; that *hemorrhoids* here stands for a spitting of blood from the eroded veins of the lungs, which he endeavours to support by a text from *Aristotle*, which makes that word stand for any sort of bleeding. But this is plainly to distort the sense of *Hippocrates*, without reason; since the commonly received sense of the term so well agrees with what *Hippocrates* seems to intend by that passage.

Why in putrefactions of the liver, lungs, &c.] This principally happens in the last stage of a fatal consumption of the lungs, when the patient melts away in nocturnal sweats, as we formerly remarked at §. 983. But the spitting then usually abates or stops, and so the ulcerous or corrupt matter is not carried off, but goes into the blood, already exhausted of its more fluid or subtle parts, whereupon nature as her last effort makes an unsuccessful deposition upon the surface of the alimentary passages: while at the same time it is also usual for the nocturnal sweats to be greatly diminished before the thrush break out.

Why from chilled or checked apthæ a quinsy, swelling, &c.] Namely, whenever the patient makes too free with the very cold air, or takes drinks actually cold, or uses gargles in the same condition: for then the mouths of the apthous vessels are constricted, or bound up by the cold, the apthous matter itself is condensed in them, and the incrustations formed by it, are more compacted together; by all which the deposition

^a In Coacas Hippocratis pag. 464.

deposition and expulsion of the matter of the distemper is hindered: upon this the fever directly increases, and urges the humours with more force upon the obstructed or distressed parts, in which consequently arises a heat and swelling; and, in the fauces, a most dangerous quinsy will thus very suddenly arise. Hence *Ketelaer*^b, who had seen the worst mischiefs from cold applications, always cautions for the use of every thing to be made tepid or moderately warm. Even hence it is, that physicians often cloathe the throat with plasters and pultices, that all the circumjacent parts may be retained in a due state of warmth and relaxation.

Why a delirium, restless tossings, watchings, &c.] Because they denote the vital powers to be sinking, and that the matter of the distemper is either so abundant, or so malignant, that altho' a part of it is already thrown off in the thrush, yet the remains suffice to disturb all the functions of the body; and that it begins now to invade the finer vessels of the brain itself. But for the patient to be able to recover, all those bad symptoms which go before the eruption of the thrush must either go quite off or greatly diminish: “since
“critical appearances, that bring not the distemper
“to a crisis or extermination, are either fatal, or
“marks of extreme difficulty in the cure or termination of the malady (see §. 741.)” But since there are here so many malignant signs that concur together, it is easily apparent, that not a difficulty of the crises, but certain death itself is to be expected.

S E C T. DCCCCXCII.

TIS therefore a rule, that the pellucid, white, thin, and scattered thrush, that are soft, superficial, little apt to sprout, and easily falling off, afford a good presage: but on the contrary, those thrush that are of a very opaque

^b De Aphthis pag. 49, &c.

464 Of the A P H T H A E, &c. Sect. 992.
pague white, yellow, brown, or black colour,
running together into close, thick, hard, and
tough incrustations, perpetually either sprouting
or ulcerating, afford the very worst presage.

We formerly treated upon the various manners in which the thrush usually break forth at §. 984, and from thence we deducted their prognosis; but of their colours we treated at §. 985, and of the various presages to be derived from them; and lastly, at §. 986, we spoke of the variety that obtains in respect to their separation, and reiterated sproutings anew; and from these again we drew various conclusions in respect to the events of the thrush. In the present section then we have all those particulars collected together, which are observed in the good and bad thrush, that the physician may be thence enabled to foresee and foretel, whether health or fatality may be expected. But as we have already considered all these particulars in the above-mentioned places, it is therefore here needless to insist further upon them.

End of the NINTH VOLUME.

